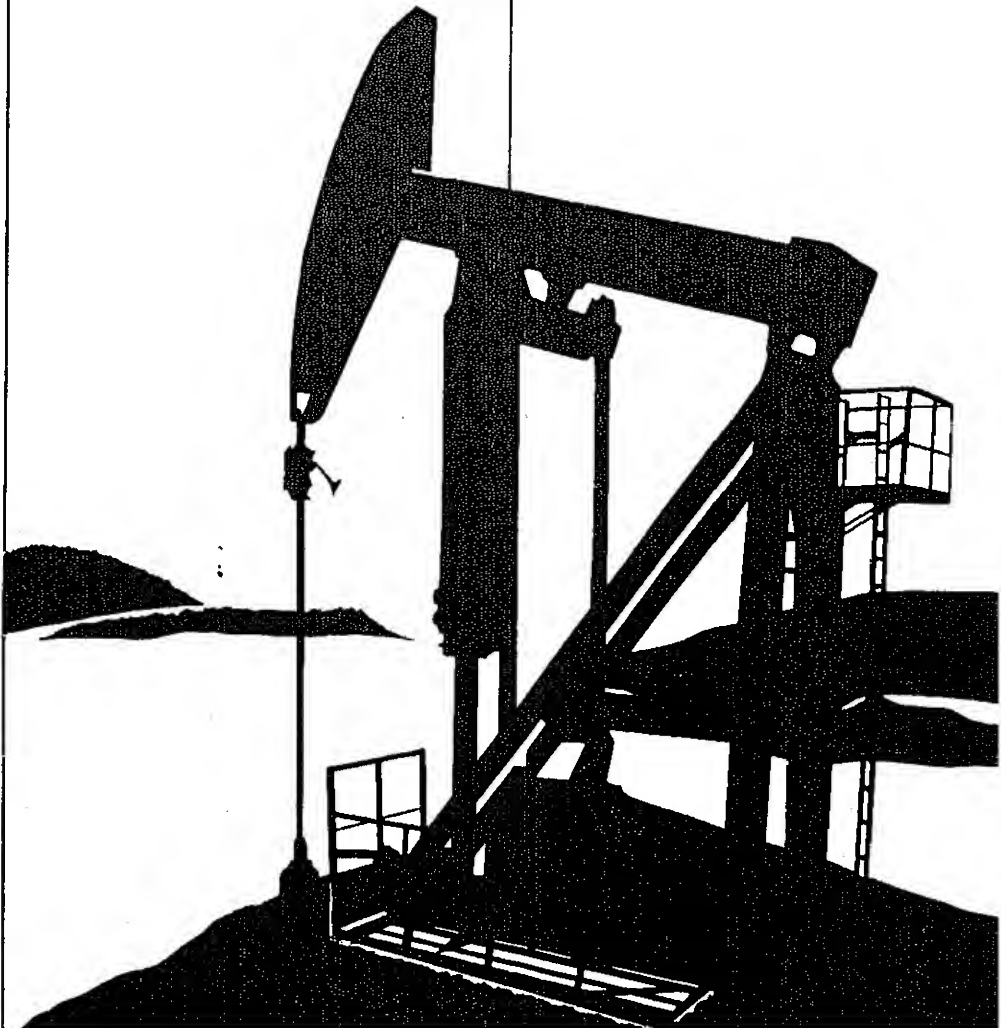




# Petroleum Supply Monthly



Energy Information Administration  
Office of Oil and Gas  
**U.S. Department of Energy**



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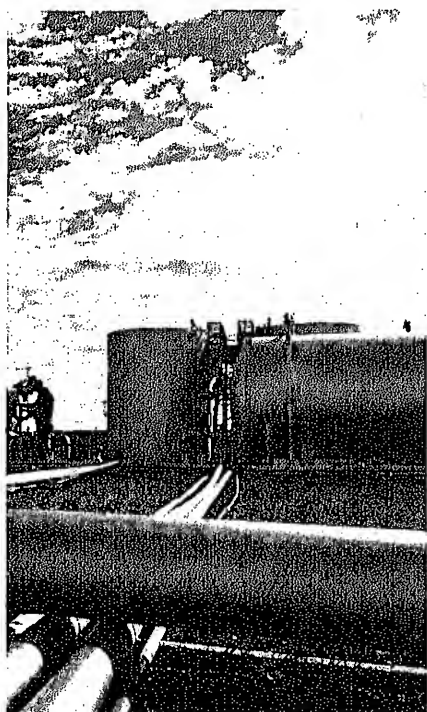
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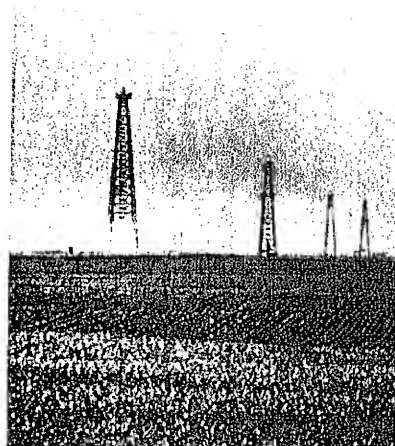
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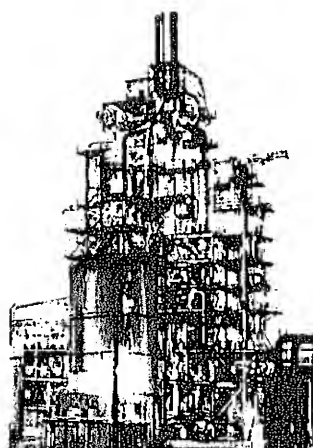
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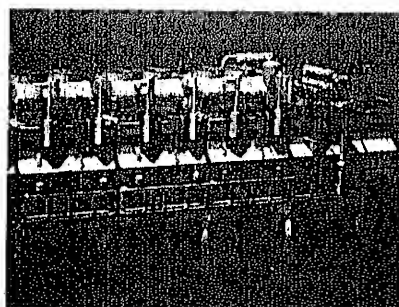


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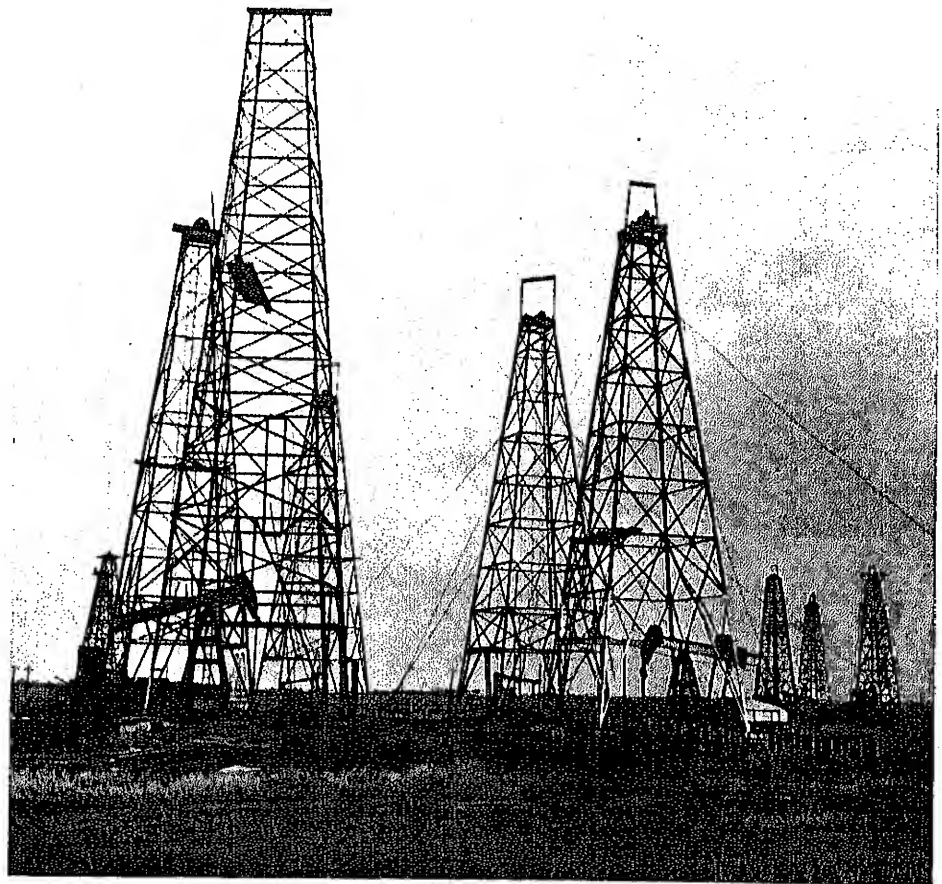
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# **Petroleum Focus**





# Petroleum Supply Summary

Average volume for Period (Million Barrels Per Day)	October			Cumulative January Through October		
	1982	1981	% Change	1982	1981	% Change
Total Product Supplied	15.2	15.8	-4.0	15.3	16.0	-4.7
Motor Gasoline	6.5	6.6	-1.1	6.5	6.6	-0.8
Distillate Fuel Oil	2.6	2.8	-7.5	2.7	2.8	-4.0
Residual Fuel Oil	1.4	1.9	-24.7	1.7	2.1	-18.1
Crude Inputs to Refineries	11.9	12.1	-1.5	11.8	12.5	-5.5
Crude Oil and Natural Gas Liquids Production	10.2	10.2	-0.04	10.2	10.2	-0.03
Net Imports <sup>1</sup>	4.2	5.2	-19.5	4.2	5.5	-23.0
Net Crude Oil Imports <sup>2</sup>	3.3	3.7	-12.0	3.1	4.0	-22.4
SPR Imports	0.2	0.5	-63.4	0.2	0.3	-36.5
Net Product Imports	0.7	1.1	-31.2	1.0	1.2	-22.2
Crude Oil Stock Withdrawal <sup>3</sup>	0.08	-0.26	—	0.10	0.05	—
Product Stock Withdrawal	0.30	0.48	—	0.34	0.10	—
Stocks at End of Period (Million Barrels)						
Crude Oil <sup>3</sup>	355	364	-2.5			
Motor Gasoline <sup>3</sup>	228	236	-3.3			
Distillate Fuel Oil	165	201	-17.8			
Residual Fuel Oil	62	80	-22.7			
Total Product	793	906	-12.5			
SPR	285	215	32.5			
Total	1,432	1,485	-3.5			

<sup>1</sup>Gross imports of crude oil (including Strategic Petroleum Reserve) and petroleum products less exports of crude oil and petroleum products.

<sup>2</sup>Excluding Strategic Petroleum Reserve (SPR).

<sup>3</sup>Including blending components.

Note: Percent changes are based on unrounded values. October 1982 data are estimates based on weekly data, except for export estimates which are September 1982 monthly values.

Source: Energy Information Administration, U.S. Department of Energy, *Petroleum Supply Monthly*, November 1982.

# Trends in Domestic Crude Oil Production and Reserves

Although domestic petroleum industry drilling increased dramatically in 1980 and 1981, there were no significant increases in domestic crude oil production or proved domestic crude oil reserves (see Figure 1).<sup>1</sup> The increased drilling activity has held production stable and almost stopped the decline of proved reserves.

Drilling activity has decreased in 1982 following the crude oil price decline that started in mid-1981. The Energy Information Administration (EIA), therefore, expects that crude oil production will decline during 1983 by about 110 thousand barrels per day from its projected 1982 level to average 8.5 million barrels per day (see Table 1). With crude oil production declining, net petroleum imports during 1983 are expected to be 750 thousand barrels per day above their projected average for 1982. The expected increase in imports will result from increasing domestic petroleum consumption and decreasing petroleum stock withdrawals.

Domestic crude oil production is expected to continue to decline through 1985. This trend could be reversed by an increased pace of discovery and development of oil fields and more extensive implementation of improved technology

for enhanced oil recovery (EOR). Increases in wellhead crude oil prices would stimulate both exploration activity and increased use of EOR techniques.

## Trends in Drilling Activity

Following the 1973-74 oil embargo and its associated price increases, the total number of oil wells completed began increasing at a moderate rate. Following the phased decontrol of crude oil prices beginning in early 1979 and complete decontrol in early 1981, drilling increased dramatically. Ninety-four percent more oil wells (37,671 wells) were completed during 1981 than during 1979. When crude oil prices began to drop in mid-1981, the economic impetus for this high level of drilling activity was reduced. The effect of the price drop became apparent later in the year (see Figure 2). The number of crews engaged in seismic exploration peaked at 744 in September 1981, and the number of rotary rigs in operation peaked at 4,520 in December. Both have dropped steadily during 1982. By September 1982, the number of rotary rigs had fallen to pre-1980 levels.

The reported monthly rate of well completions<sup>2</sup> peaked at over 8,000 completions during May 1982 and then declined 25 percent by August.<sup>3</sup> The apparent time lag between the peak in the number of rigs and the peak in the number of wells completed is due both to de-

**Table 1. Supply and Disposition of Petroleum**  
(Thousand Barrels per Day)

	Projections <sup>1</sup>		
	1982	1983	Change
Consumption <sup>1,3</sup>	15,500	15,770	+270
Supply			
Production			
Crude Oil	8,590	8,480	-110
Natural Gas			
Liquids	1,550	1,580	+30
Total Production <sup>2</sup>	10,700	10,620	-80
Primary Stock Withdrawals (+) or Additions (-)			
Non SPR <sup>1,4</sup>	350	30	-320
SPR Crude Oil <sup>4</sup>	-180	-190	-10
Net Imports <sup>1</sup>	4,560	5,310	+750

### Notes for Table 1:

<sup>1</sup>Includes crude oil and petroleum products.

<sup>2</sup>Includes processing gain.

<sup>3</sup>Measured as product supplied.

<sup>4</sup>SPR stands for Strategic Petroleum Reserve.

Note: Supply totals do not equal consumption totals because of a 70 thousand barrels per day discrepancy factor in the 1982 estimates (See *Short-Term Energy Outlook* for explanation).

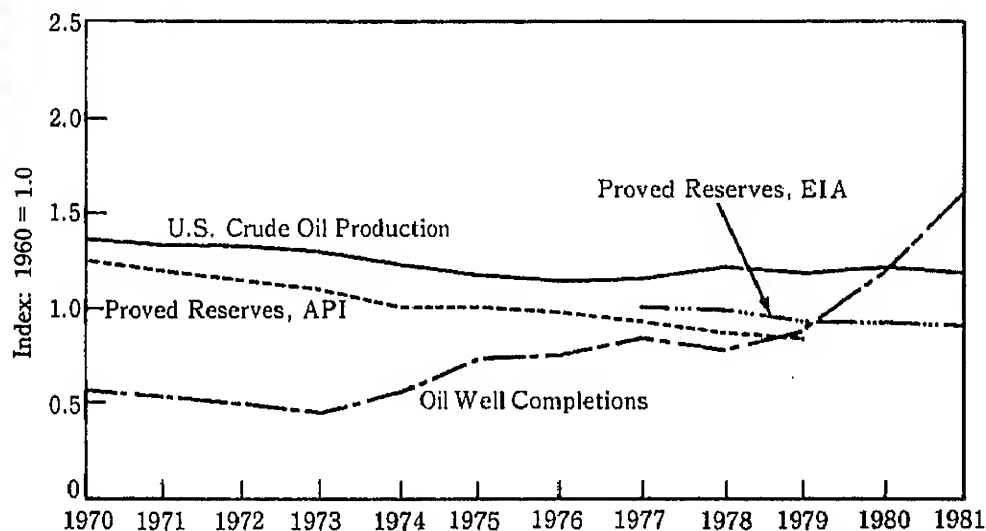
Source: Energy Information Administration, U.S. Department of Energy, *Short-Term Energy Outlook*, DOE/EIA-0202 (82/3Q), Washington, D.C., August 1982. Table 5. Quarterly Supply and Disposition of Petroleum; Base Case.

<sup>1</sup>EIA began making annual reserve estimates starting with the end of 1977. After EIA and the American Petroleum Institute (API) had operated in parallel for three years, API dropped its reserve estimation program. During the three years of parallel operation, the EIA estimates averaged 10.2 percent higher than the API estimates.

<sup>2</sup>Includes oil well completions, gas well completions, and dry holes. Oil wells were 48 percent of the total wells drilled in 1981, gas wells were 23 percent, and dry holes were 29 percent.

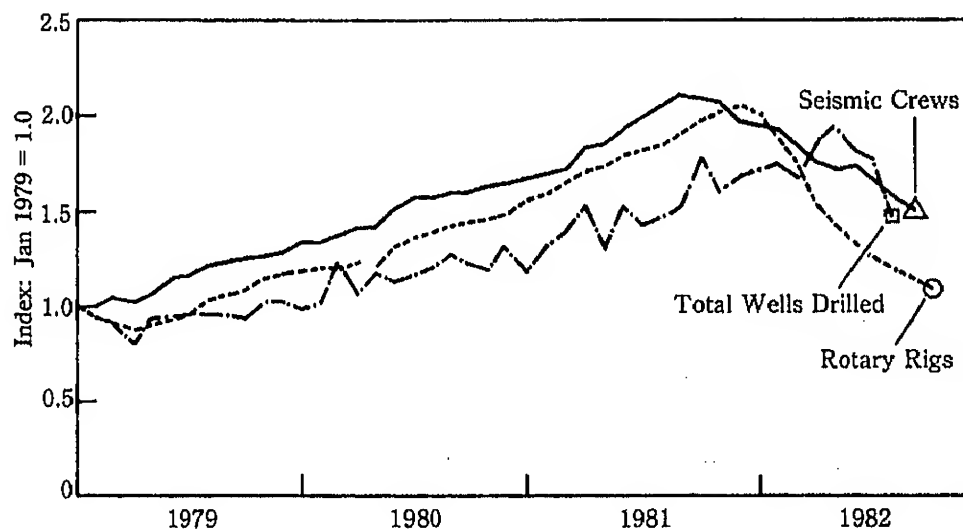
<sup>3</sup>American Petroleum Institute series seasonally adjusted using the U.S. Bureau of the Census X-11 method. Data reported for the first 2 months of each quarter cover 4 weeks of drilling activity; data for the last month of the quarter cover 5 weeks of drilling activity. The seasonally adjusted series was used because it helps to smooth false variation caused by unequal report months.

**Figure 1. Crude Oil Production, Reserves, and Oil Well Completions**



Sources: • Oil Well Completions: American Petroleum Institute, *Quarterly Review of Drilling Statistics for the U.S.*, 1970-1981.  
 • Proved Reserves: American Petroleum Institute, *Reserves of Crude Oil, Natural Gas, and Natural Gas Liquids in the U.S. and Canada*, 1970-1979; Energy Information Administration, U.S. Department of Energy, *U.S. Crude Oil, Natural Gas Liquids Reserves*, 1977-1981.  
 • Crude Oil Production: Bureau of Mines, U.S. Department of Interior, *Petroleum Statement, Annual*, 1970-1976; Energy Information Administration, U.S. Department of Energy, *Petroleum Supply Annual*, July 1982.

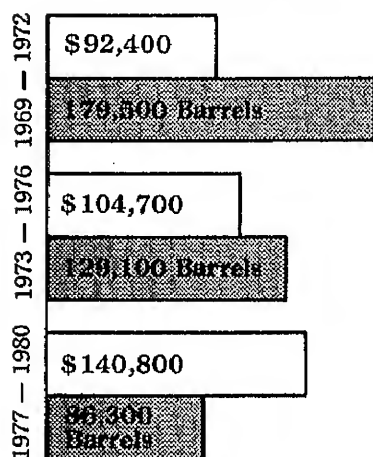
**Figure 2. Rotary Rigs, Seismic Crews, and Total Wells Drilled**



Sources: • Total Wells Drilled: American Petroleum Institute, *Monthly Statistical Report*, Series seasonally adjusted using the Bureau of the Census X-11 method.  
 • Rotary Rigs: Hughes Tool Company, *Rotary Rigs Running — By State*, January 1979-September 1981.  
 • Seismic Crews: Society of Exploration Geophysicists, "SEG News Release," January 1979-September 1982.



**Figure 3. Reserves  
Added vs Cost<sup>1</sup> per Oil  
Well Completion**



<sup>1</sup>Cost in 1972 constant dollars.

- Sources: • Oil Well Completions: American Petroleum Institute, *Quarterly Review of Drilling Statistics for the U.S.*, 1969-1981.
- Reserves Added: American Petroleum Institute, *Reserves of Crude Oil, Natural Gas, and Natural Gas Liquids in the U.S. and Canada*, 1969-1976; Energy Information Administration, U.S. Department of Energy, *Crude Oil, Natural Gas, and Natural Gas Liquids Re-*

lays from the end of drilling to the completion of wells and to delays of several months or more in reporting completions.

Offshore activity is particularly interesting. Any future giant oil finds are more likely to occur in offshore than in onshore areas.<sup>4</sup> Offshore seismic exploration continued to increase after onshore exploration began to decline in 1981. At the same time, the number of offshore rotary rigs in operation has held steady. One reason for this continued activity is that offshore operations are usually performed under long term contracts and, therefore, respond more slowly to changing events.

### Impact of Drilling on Production and Reserves

During the last decade, the nature of drilling activity has changed because of economic and geologic factors. Many of the new oil fields discovered in recent years have been deeper, more remote, or in less prolific geologic formations. They also have tended to be smaller and are generally expected to have shorter productive lives than the older, larger fields.

This pattern is predictable because large, accessible fields tend to be discovered first, and fields less costly to produce tend to be developed first. Some indications of this pattern are shown in Figure 3. The drilling cost in constant dollars per well has increased, while the reserves added per well have decreased. High oil prices fueled these trends. When oil prices began to drop, the high costs and low return contributed to the 1982 decline in drilling activity.

The current tendency to discover smaller, costlier oil fields also affects the relationship between reserves and production. The results of exploration (new fields, new reservoirs, and extensions to reservoirs) have a relatively quick impact on reserves, but the impact on production is spread over several years. Oil field development has a more immediate impact on production.

As oil prices and drilling costs rose, development drilling increased faster than exploratory drilling. Exploratory wells drilled fell from 28 percent of the total wells drilled in 1973 to 19 percent in 1981.<sup>5</sup> This relative emphasis on devel-

opment drilling has helped to maintain domestic production while reserves have fallen. The ratio of reserves to production has fallen steadily since 1975. Increases in infill drilling of older oil fields have been an important part of the development drilling. Infill drilling has the immediate effect of increasing production but affects reserve estimates only slightly. It, therefore, shortens the expected productive life of an oil field because a fixed amount of reserves is being produced at a faster rate.

### Recent Trends in Production and Reserves

Despite a record amount of drilling in 1981, additions to proved crude oil reserves did not keep pace with production, as they did in 1980. The last year that additions exceeded production was 1970, when the Prudhoe Bay field in Alaska was added to the reserve accounts. During 1981, crude oil reserves decreased by 380 million barrels to 29.4 billion barrels; this decrease was partially offset by a 340 million barrel increase in natural gas liquids reserves which were estimated to be 7.1 billion barrels.<sup>6</sup> Offshore reserves have been increasing for the last four years, countering the national trend. Both offshore reserves and production were over 10 percent of the national totals during 1981.

Crude oil production has been virtually stable since 1978, first because of the increase in production from Alaska's North Slope and later because the increased development drilling arrested the production decline in the lower-48 states (see Figure 4). Alaskan production rose from less than 200 thousand barrels per day during 1976 to about 1.6 million barrels per day during 1980 and

<sup>4</sup>Geological Survey, U.S. Department of the Interior, *Estimates of Undiscovered Recoverable Conventional Resources of Oil and Gas in the United States*, Geological Survey Circular 860 (Washington, D.C., 1981).

<sup>5</sup>American Petroleum Institute, *Quarterly Review of Drilling Statistics for the United States* (Washington, D.C. 1973-1981).

<sup>6</sup>Energy Information Administration, U.S. Department of Energy, *Crude Oil, Natural Gas Liquids, and Natural Gas Liquids Reserves*, 1981, Table 1. EIA began making annual reserve estimates for natural gas liquids starting with the end of 1979. Please note that lease condensate is counted with crude oil in estimating production (about 5 percent of crude production in 1981) but with natural gas liquids in estimating reserves.

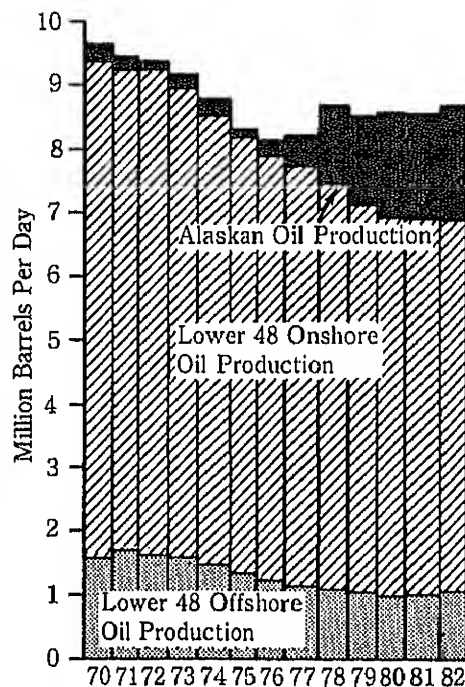
1981. An additional 100 thousand barrels per day from the Kuparuk River field on the North Slope came on stream in January 1982.

Production from the lower-48 states fell from 9.0 million barrels per day in 1973 to 7.0 million barrels per day in 1980. It has held steady at about 7.0 million barrels per day through 1981 and the first 6 months of 1982 (see Table 2). Production declines in the older, oil producing States, such as Texas and Louisiana, have been balanced by such diverse means as enhanced oil recovery in California, new field discoveries in North Dakota, and small field development throughout the Midwest.

- Texas production, moderated by infill and extension drilling in older fields and some new finds, has declined steadily at an annual average rate of 3 percent for several years.

- Louisiana production has declined at a 4 percent annual average rate for several years. Louisiana has a high proportion of offshore production. These offshore reservoirs generally offer less opportunity for secondary recovery and have a high decline rate.
- California production increased 8 percent in 1981 after remaining stable since 1977. Continued development of production from the Federal offshore fields and enhanced recovery of heavy oils contributed to the increase.
- North Dakota production increased 13 percent in 1981. The increase resulted principally from development of the Williston Basin.
- In 1981, development of small fields contributed to a 3-percent production increase in Oklahoma, as well as to increases in a number of other producing States in the Midwest.

**Figure 4. U.S. Crude Oil Production 1970-1982**



Sources: • Bureau of Mines, U.S. Department of Interior, *Petroleum Statement, Annual*, 1970-1976; Energy Information Administration, U.S. Department of Energy, *Petroleum Statement, Annual*, 1977-1980; EIA, *Petroleum Supply Annual*, 1981; EIA, *Petroleum Supply Monthly*, May — October 1982.

### Short-Term Prospects for Crude Oil Production

EIA's short-term projections indicate that U.S. crude oil production will decline by about 110 thousand barrels per day during 1983 from its projected 1982 level (See Table 1). These projections rely on the assumption that recent production patterns will continue. Current expectations of what crude oil prices

**Table 2. Production of Crude Oil<sup>1</sup> (Including Lease Condensate)**  
(Thousand Barrels Per Day)

State or Region	Oil Production		
	1980	1981	1982 <sup>2</sup>
<b>Lower 48</b>			
States, Total	6,980	6,962	6,962
California	975	1,055	1,093
Colorado	81	83	86
Florida	117	95	74
Kansas	164	180	192
Louisiana	1,282	1,231	1,232
Michigan	92	89	86
Mississippi	98	94	98
Montana	81	84	85
New Mexico	206	196	195
North Dakota	110	124	123
Oklahoma	410	422	435
Texas	2,371	2,589	2,544
Wyoming	345	358	353
Other States	348	362	350
Alaska	1,817	1,609	1,699
<b>United States, Total<sup>2</sup></b>	<b>8,597</b>	<b>8,572</b>	<b>8,651</b>

#### Notes for Table 2:

<sup>1</sup>Preliminary data for first six months of 1982.

<sup>2</sup>Includes offshore production of 1037 thousand barrels per day for 1980; 1034 thousand barrels per day for 1981; and 1072 thousand barrels per day for the first 6 months of 1982.

Note: Totals may not equal sum of components due to independent rounding.

Sources: Energy Information Administration, U.S. Department of Energy, *Petroleum Statement, Annual*, 1980; EIA, *Petroleum Supply Annual*, 1981; EIA, *Petroleum Supply Monthly*, May-October 1982.

will be in the near future have little effect on the projections of crude oil production.

The production of natural gas liquids<sup>7</sup> is expected to increase by 30 thousand barrels per day during 1983, partially offsetting the decline in crude oil production. Total petroleum liquids (the sum of crude oil and natural gas plant liquids) production is therefore expected to decline by 80 thousand barrels per day.

During 1983, domestic consumption of petroleum products is projected to increase by about 270 thousand barrels per day to 15.8 million barrels per day due in large part to increased economic activity. (The U.S. Gross National Product is assumed to increase 3 percent during 1983.) The increase in consumption would be larger were it not for continuing long-term responses to previous increases in petroleum prices.

U.S. primary stocks of crude oil and petroleum products, excluding the Strategic Petroleum Reserve (SPR), have declined in 1982. This stock withdrawal helped depress the level of net imports of crude oil and petroleum products in 1982. Because total petroleum stocks are currently lower than in the past, stock withdrawals are expected to average only 30 thousand barrels per day in 1983. The fill rate of the SPR is expected to increase slightly from 180 thousand barrels per day in 1982 to 190 thousand barrels per day in 1983.

The decrease in stock withdrawals, the increase in consumption, and the 80 thousand barrel a day decrease in domestic petroleum production all contribute to an expected increase of 750 thousand barrels per day in net imports of petroleum in 1983.

### Longer-Term Prospects for Crude Oil Production

Crude oil production is expected to decline at least through 1985.<sup>8</sup> Reversal of this trend depends in part on increasing the rate at which new fields are discovered and on development of unconventional sources of oil.

The ratio of proved reserves to production has been falling due to the decline of reserves in old fields and the shorter

expected productive life of the new fields being found. As the ratio falls, new fields must be found and developed at an increasing rate to maintain production. Higher crude oil prices will be necessary to stimulate accelerated development in the face of rising costs.

Many new field discoveries are expected from offshore areas. Many of the unexplored offshore basins are on Alaska's North Slope. Although the basic technology is available to explore, develop, and transport oil and gas in most Alaskan and Arctic areas, requirements for further technological development and lead times of 5 to 10 years mean most new Alaskan areas will not be producing until the 1990's, even if exploration is begun now.

Reversal of the expected decline in crude oil production will also depend on increasing production from enhanced oil recovery and other unconventional sources of oil. This will require development of new technology and higher crude oil prices. Such unconventional sources as synthetic crude oil and oil shale are not expected to contribute much before 1990.

Currently available EOR techniques such as steam injection are, however, increasingly being applied to oilfields. EOR has grown from about 2 percent of U.S. production in 1973 to over 4 percent of U.S. production in 1982.<sup>9</sup> EOR projects using chemical, gaseous, or combustion in situ methods have been encouraged by a provision of the Crude Oil Windfall Profit Tax enacted in April 1980. This provision gives a subsidy for initiating an EOR project but not for sustained EOR production.<sup>10</sup> EOR could possibly boost the total recovery of oil in-place to 40 percent from the 30 percent estimated for conventional recovery.

Through the application of currently commercial EOR techniques, an estimated 18 billion barrels more may be re-

<sup>7</sup>Does not include lease condensate.

<sup>8</sup>Energy Information Administration, U.S. Department of Energy, *Annual Report to Congress, 1981*, Vols 2 and 3, DOE/EIA-0173(80) (Washington, D.C., 1982).

<sup>9</sup>"Annual Survey of EOR Projects." *Oil and Gas Journal* (April 5, 1982).

<sup>10</sup>"Crude Oil Windfall Profits Tax Act of 1980," Public Law 96-223—April 2, 1980.

covered from known fields" than are currently counted in proved reserves. Improved EOR techniques could provide an even larger increase in reserves. These improved techniques may be expensive to apply, depending on the results of research efforts, and their implementation is likely to be spread over many years. Only the least expensive EOR techniques are likely to be used while oil prices stay at their current levels.

<sup>11</sup>Bartlesville Energy Technology Center, U.S. Department of Energy, *Outlook for Enhanced Oil Recovery*, DOE/BETC/OP-82/4, by H.R. Johnson (Bartlesville, Oklahoma: June 1982).

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## Explanation of Terms

### Additions to Proved Reserves:

**New Field Discoveries.** The volumes of proved reserves of crude oil and/or natural gas discovered in new fields during the report year.

**New Reservoir Discoveries in Old Fields:** The volumes of proved reserves of crude oil and/or natural gas discovered during the report year in new reservoirs located in old fields.

**Extensions:** The reserves credited to a reservoir because of enlargement of its proved area. Normally, the ultimate size of newly discovered fields, or newly discovered reservoirs in old fields, is determined by information from wells drilled in years subsequent to discovery. When such wells add to the proved area of a previously discovered reservoir, the increase in proved reserves is classified as an extension.

**Revisions:** Changes to earlier estimates, either positive or negative, resulting from new information, except for an increase in proved acreage (extension). Revisions for a given report year also include increases of proved reserves associated with the installation of improved recovery techniques or equipment.

**Basin.** A sedimentary segment of the earth's crust which has been down-warped, usually for a considerable time. The sediments in such basins increase in thickness toward the center of the basin.

**Conventional Oil Recovery.** The recovery of liquid hydrocarbons obtained by natural reservoir energy or by natural reservoir energy augmented by the injection of water or natural gas.

**Enhanced Oil Recovery.** The commercial or experimental recovery of liquid hydrocarbons by augmenting the natural reservoir energy by thermal, chemical, or gaseous (other than natural gas) methods. It is usually used after substantial depletion of the reservoir by conventional methods.

**Field.** An area consisting of a single reservoir or multiple reservoirs all grouped on, or related to, the same indi-

vidual geological structural feature and/or stratigraphic condition.

**Proved Reserves of Crude Oil.** The estimated quantities of all liquids defined as crude oil, excluding lease condensate, which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions.

**Proved Reserves of Natural Gas Liquids.** The estimated quantities of all lease condensate and natural gas liquids which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions.

**Reservoir.** A porous and permeable underground formation containing an individual and separate natural accumulation of producible hydrocarbons (oil and/or gas) which is confined by impermeable rock or water barriers and is characterized by a single natural pressure system.

**Rotary Rig.** A machine, used for drilling wells, that employs a rotating tube attached to a bit for boring holes through rock.

**Well Completion.** The installation of permanent equipment for the production of oil or gas. Installation may take place any time after a well is drilled.

### Wells:

**Development Well.** A development well is a well drilled within the proved area of an oil or gas reservoir to the depth of a stratigraphic horizon known to be productive.

**Exploratory Well.** A well drilled to: (1) find and produce oil or gas in an unproved area; (2) find a new reservoir in a field previously found to be productive of oil or gas in another reservoir; or (3) extend the limit of a known oil or gas reservoir.

**Infill well.** A development well drilled or completed between known producing wells for the purpose of increasing production and/or ultimate recovery in a known reservoir.

**Dry Hole.** An exploratory or development well found to be incapable of producing either oil or gas in sufficient quantities to justify completion as an oil or gas well.

# Major Energy Companies' Investment and Resource Development Patterns, 1974-80

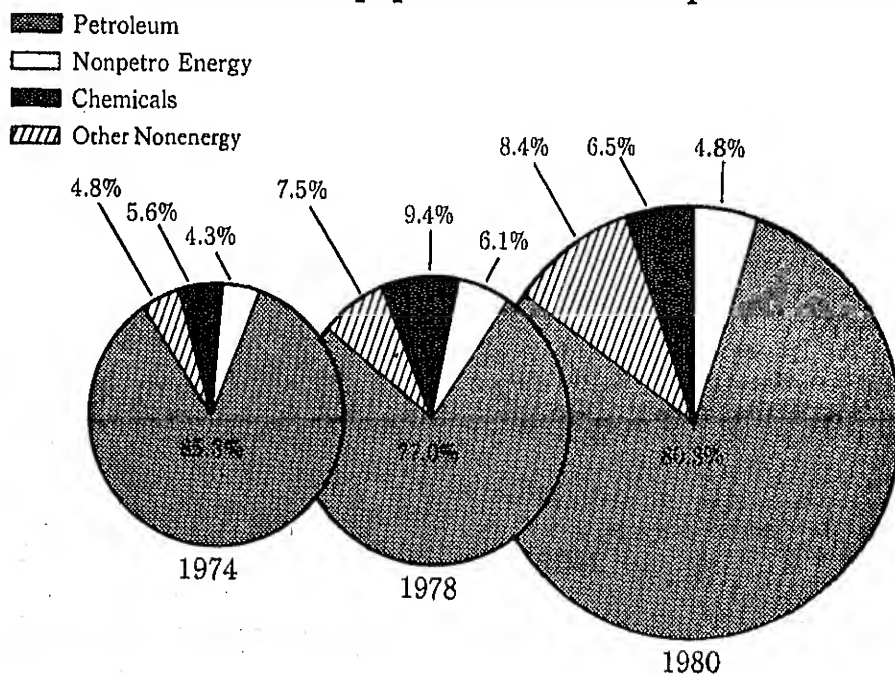
During the 1960's, a period of stable or declining real energy prices, major U.S. energy companies experienced strong growth as worldwide demand for petroleum doubled. In this era, the U.S. economy and other economies throughout the world became more dependent on petroleum to serve their energy needs.

The sudden escalation of petroleum prices as a result of the Arab oil embargo in late 1973 reversed this process. This price shock and altered price expectations which resulted from it posed serious planning problems for all significant energy users and producers. At the outset, energy producers were in some measure beneficiaries of the price upheaval as profits tended to rise with escalating prices. At the same time, however, they served markets where uncertainties were substantially heightened. They could no longer count on stable prices and growing demand. The increasingly overt political mechanisms guiding the Organization of Petroleum

Exporting Countries (OPEC) crude oil pricing and domestic regulatory actions complicated decisionmaking regarding investments in exploration and development.

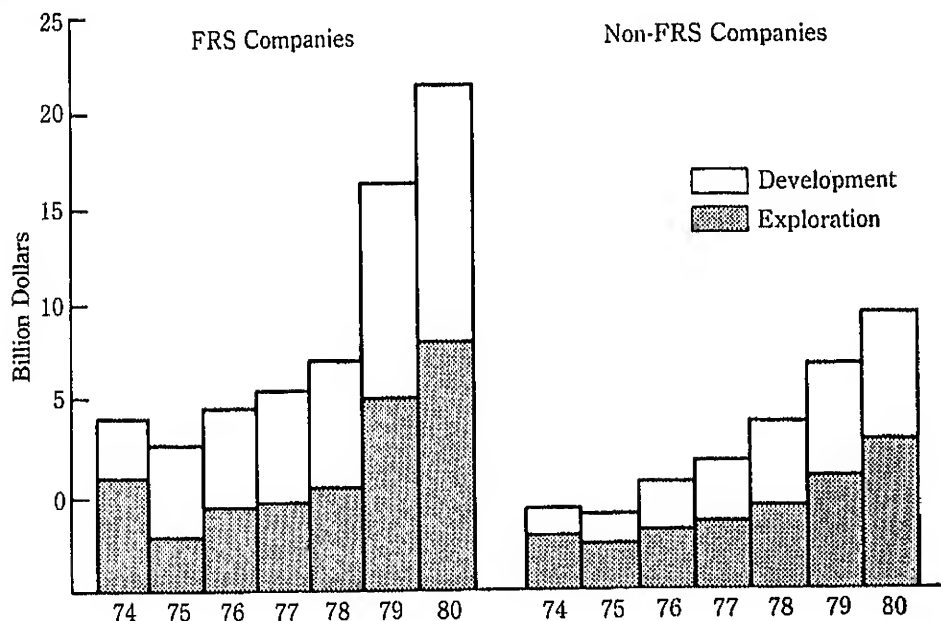
Clearly, under the high price umbrella dictated by OPEC, many previously uneconomic development areas became attractive, but an increased search for additional oil and gas supplies entailed the assumption of new risks. Within the United States, risk taking was complicated by price controls on crude oil and refined products. At the same time, growth potential for petroleum product demand was undermined. Thus, long-run profit and investment expansion in petroleum became potentially less attractive. For many corporations seeking to sustain long-term growth, a search for promising alternative investment outlets was undertaken. In short, the price upheavals of the 1970's disturbed energy markets as profit expectations and uncertainties across a range of ac-

**Figure 5. Composition of Additions to Property, Plant, and Equipment<sup>1</sup> for FRS Companies**



<sup>1</sup> Excludes Nontraceable Expenditures. Areas Are Proportional to 1974 Expenditures.

**Figure 6. Domestic Exploration and Development Expenditures**



Source: • Non-FRS Values Were Obtained by Subtracting FRS Values from Annual U.S. Totals in Bureau of the Census, U.S. Department of Commerce, *Annual Survey of Oil and Gas*, Table 3 for 1974 to 1979, Table 5 for 1980.

tivities were altered. A host of corporate decisions were made to reorient operations to the new market circumstances.

Many aspects of the adjustment efforts and of the consequent performance of major U.S. energy companies in the postembargo era are addressed in a recent Energy Information Administration (EIA) report.<sup>1</sup> The information presented in this report is taken from the data base of EIA's Financial Reporting System (FRS) covering 26 major energy companies for the years 1974-80. Some highlights of that report are presented below.

As a group, FRS companies are large enterprises. Even before energy supply became a national concern, most of their names were familiar.<sup>2</sup> Between 1974 and 1980 their prominence increased. At the beginning of 1974, 4 FRS companies were in the top 10, and 7 were in the top 20 of *Fortune's* listing of the 500 largest U.S. companies<sup>3</sup> (ranked by sales). By the end of 1980, the top 10 of the *Fortune* listing contained 6 FRS companies, and 13 of the top 20 were FRS companies.<sup>4</sup>

Substantial capital expenditures supported this growth. In 1974, new investment for the group as a whole totaled \$19 billion. In each subsequent year spending increased, with especially large gains in 1979 and 1980. In the latter year, the capital budget for FRS companies exceeded \$47 billion.

With the onset of the "energy crisis," considerable speculation attended the probable future course of energy company investment. While some observers expected substantial efforts by major energy companies to spearhead nonpetroleum energy development, others

<sup>1</sup>Energy Information Administration, U.S. Department of Energy, *Energy Company Development Patterns in the Postembargo Era*, Vols. 1 and 2, October 1982.

<sup>2</sup>Amerada Hess, American Petrofina, Ashland, Atlantic Richfield, Burlington Northern, Cities Service, Coastal, Conoco, Exxon, Getty Oil, Gulf Oil, Kerr-McGee, Marathon, Mobil, Occidental, Phillips Petroleum, Shell Oil, Standard Oil of California, Standard Oil Company (Indiana), Standard Oil Company (Ohio), Sun Company, Superior, Tenneco, Texaco, Union Oil of California, and Union Pacific.

<sup>3</sup>*Fortune* (May 1975).

<sup>4</sup>*Fortune* (May 4, 1981).



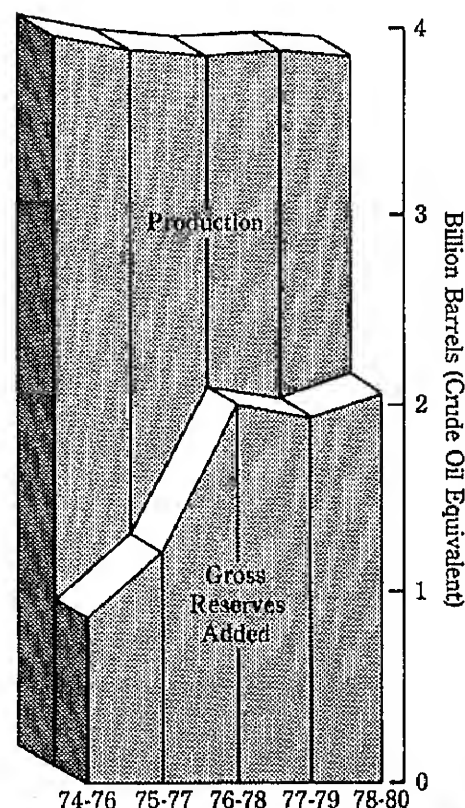
thought diversification beyond energy would assume great significance. Actual events indicate that some of each has happened. Efforts to diversify beyond petroleum were most evident in the 1974-78 period. Thereafter, investments were directed increasingly toward petroleum. Expenditures on oil and gas exploration more than doubled. All FRS companies redirected investment in this manner. While in 1978, 23 percent of all new investment was allocated to nonpetroleum or nonenergy activities, in 1980 the proportion had fallen to 20 percent (see Figure 5).

### Domestic Exploration and Development

Almost all the growth in petroleum investment focused on finding and developing oil and gas reserves. Throughout most of the period, new investments in refining, marketing, and transportation rose little in absolute terms and steadily declined as a proportion of petroleum investment. In 1980, 79 percent of worldwide petroleum additions to property, plant, and equipment (PP&E) involved production assets, compared to 53 percent in 1975. In 1980, FRS exploration and development expenditures exceeded \$87 billion, with \$26 billion applied to U.S. operations and the balance in a variety of overseas areas. Annual spending for domestic exploration and development nearly tripled between 1974 and 1980 (see Figure 6). From 1974 to 1978, FRS company spending rose less rapidly than the domestic petroleum industry as a whole. However, the reverse was true for 1979 and 1980. As a result, the FRS companies' 1980 share of U.S. industry exploration and development expenditures (65 percent) was about the same as in 1974 (69 percent).

A significant portion of the FRS companies' domestic resource development efforts were directed toward offshore locales. These companies have accounted for the bulk of U.S. offshore exploration and development spending and reserve additions. During the 1977-80 period (the period for which data of requisite detail are available) these companies' share of U.S. offshore drilling and equipping costs was 66 percent while their share of offshore reserves (crude oil, natural gas, and natural gas liquids on a crude oil equivalent basis) was 66 percent in 1980.

Figure 7. Gross Domestic Reserve Additions and Production of Crude Oil, Natural Gas Liquids, and Natural Gas for FRS Companies



Despite the FRS companies' prominence in offshore locales, offshore activities were of declining relative importance to FRS companies over the 1974-80 period. As Table 3 indicates, the offshore share of their exploration and development spending declined. An even sharper decline in the importance of offshore locales as a source of reserve additions is evident in Table 3. In part, these trends may reflect a shift in the relative availability of exploratory sites. FRS company holdings of offshore acreage rose slowly during most of the 1970's, while their total acreage holdings rose substantially.

Despite the growth in domestic exploration and development expenditures, reserve additions did not keep pace with production among the FRS companies over the 1974-80 period. However, as Figure 7 shows, the gap narrowed over

### Table 3. Composition of Reserve Additions<sup>1</sup> and Exploration and Development Expenditures<sup>2</sup> for FRS Companies.

	Onshore	Offshore
	(percent)	
Reserve Additions		
1-76	30.1	69.9
1-77	34.3	65.7
1-78	66.7	33.3
1-79	62.7	37.3
1-80	69.0	31.0
Expenditures		
1-76	56.0	44.0
1-77	62.2	37.8
1-78	60.7	39.3
1-79	61.9	38.1
1-80	62.9	37.1

<sup>1</sup>Crude oil, natural gas liquids, and natural gas on a crude oil equivalent basis. Reserve Additions = End-of-year Reserves minus Beginning-of-year Reserves Annual Production.

<sup>2</sup>Moving averages.



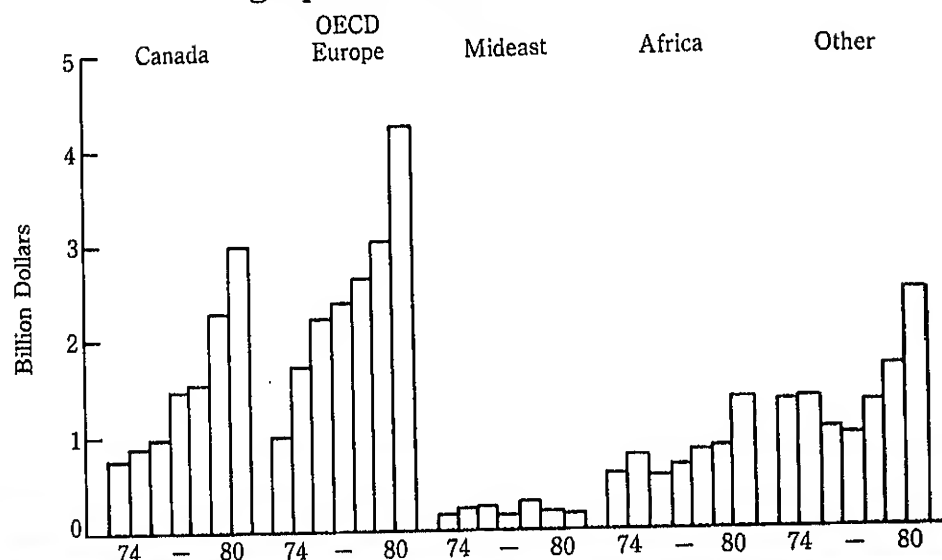
the period. The gap should narrow further as the results of the FRS companies' sharply increased resource development efforts of the 1979-81 period are realized in the 1980's, together with projected flat levels of oil and gas production.

## Foreign Exploration and Development

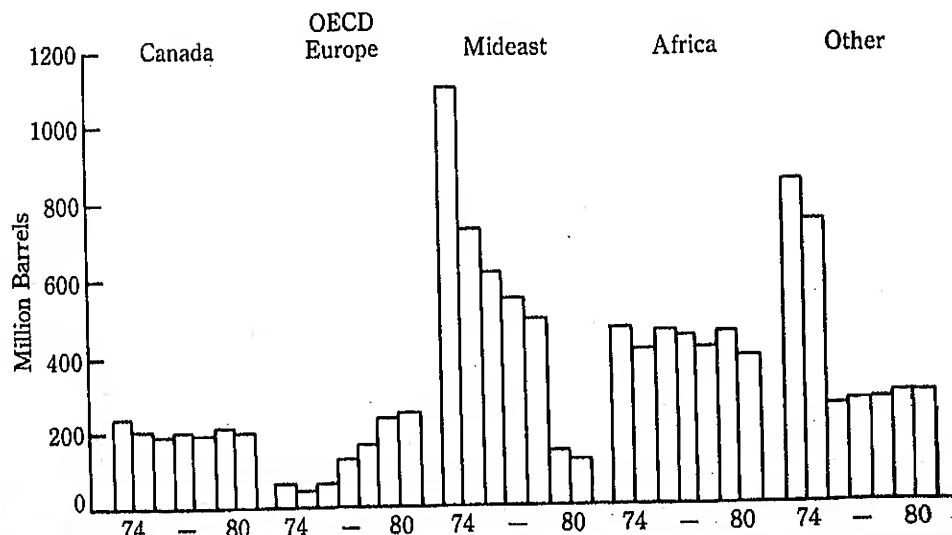
Foreign expenditures by FRS com-

panies accounted for about one-third of their total petroleum investment between 1974 and 1980. As in the United States, the focus of spending during the period shifted toward exploration and development, mostly in areas outside of the Middle East. The bulk of foreign exploration and development investment was allocated to Canadian and North Sea development (see Figure 8). However, significant investment was made in West Africa, South America, and the Far East.

**Figure 8. Foreign Exploration and Development Expenditures for FRS Companies by Geographical Area**



**Figure 9. Geographical Composition of FRS Companies' Foreign Crude Oil Production**



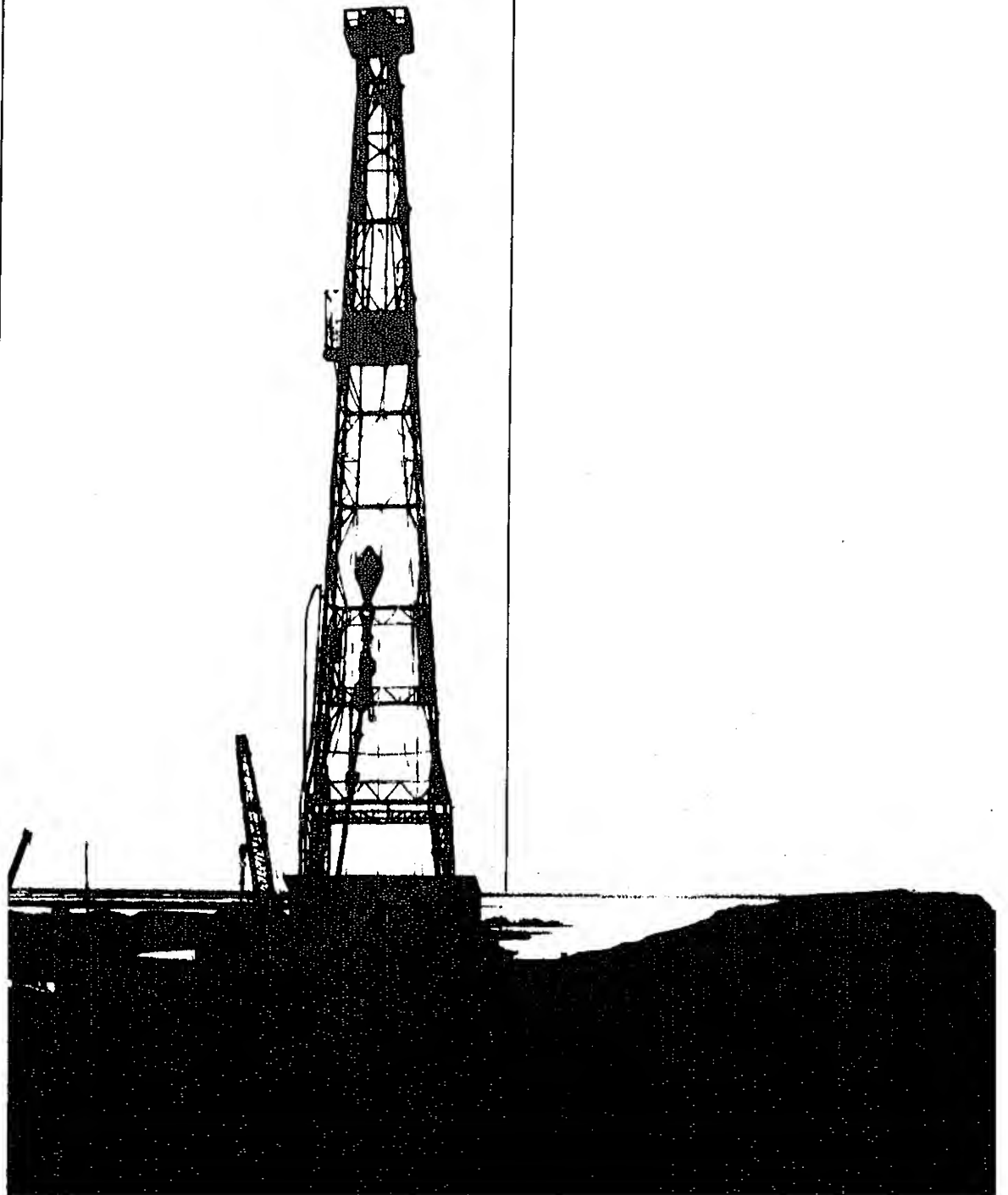
Geographical patterns of foreign crude oil production (net working interest plus production from agreements with producing countries) for FRS companies are illustrated in Figure 9. Both Canadian and African production by FRS companies fluctuated moderately over the 1974-80 period. FRS production from OECD (Organization for Economic Cooperation and Development) Europe (principally North Sea) grew steadily from about 60 million barrels in 1974 to nearly 250 million barrels in 1980. The FRS share of Western European production fell considerably during this period, however, as other companies' interest in this area expanded. Much of the

production decline in "Other" areas (all areas of the non-U.S. free world not mentioned separately) in 1976 was the result of the nationalization of Exxon's production operations in Venezuela at the end of 1975.

Certainly the most dramatic change in geographic production patterns for FRS companies was the decline in ownership production in the Middle East over the 1974-80 period. Many of the producing countries in the Middle East, such as Iran and Saudi Arabia, increasingly obtained control of their own crude oil production.



# Summary Statistics



# Crude Oil<sup>1</sup> and Petroleum Products Overview

		Field Production			Stock Withdrawal <sup>2</sup>			Ending Stocks <sup>3</sup>
		Total Domestic <sup>4</sup>	Crude Oil	Natural Gas Plant Production	Crude Oil <sup>5</sup>	Petroleum Products	Petroleum Products Supplied	Crude Oil <sup>5</sup> and Petroleum Products
		Thousand Barrels per Day						Millions of Barrels
1973	AVERAGE	10,975	9,208	1,738	11	-146	17,308	1,008
1974	AVERAGE	10,498	8,774	1,688	-62	-117	16,653	1,074
1975	AVERAGE	10,045	8,375	1,633	-17	-145	16,322	1,133
1976	AVERAGE	9,774	8,132	1,603	-39	98	17,461	1,112
1977	AVERAGE	9,913	8,245	1,618	-170	-378	18,431	1,312
1978	AVERAGE	10,328	8,707	1,567	-78	172	18,847	1,278
1979	AVERAGE	10,179	8,552	1,584	-148	-25	18,513	1,341
1980	AVERAGE	10,214	8,597	1,573	-98	-42	17,056	1,392
1981	January	10,231	8,540	1,652	50	1,159	18,430	1,388
	February	10,294	8,604	1,653	-278	250	16,989	1,389
	March	10,272	8,613	1,624	-632	224	15,907	1,401
	April	10,195	8,557	1,599	-595	148	15,350	1,415
	May	10,160	8,501	1,593	-391	-374	15,353	1,438
	June	10,287	8,629	1,594	-135	406	16,095	1,430
	July	10,098	8,500	1,548	-360	91	15,882	1,439
	August	10,243	8,583	1,614	397	-999	15,263	1,457
	September	10,281	8,604	1,612	-285	-341	15,655	1,476
	October	10,225	8,563	1,598	-780	477	15,822	1,485
	November	10,269	8,586	1,630	-325	-233	15,593	1,501
	December	10,220	8,585	1,690	-170	745	16,596	1,484
	AVERAGE	10,230	8,572	1,609	-290	130	16,058	
1982	January	10,257	8,689	1,548	-236	1,129	15,890	1,461
	February	10,261	8,690	1,524	-216	1,268	15,941	1,431
	March	10,212	8,597	1,570	-65	1,049	15,560	1,401
	April	10,296	8,652	1,588	107	1,594	16,048	1,350
	May	10,223	8,660	1,520	49	-34	14,845	1,349
	June	10,242	8,681	1,505	86	-515	14,931	1,362
	July	10,228	8,649	1,521	-155	-865	14,771	1,394
	August	10,301	8,701	1,543	-440	4	14,838	1,407
	September*	10,306	R8,733	1,513	R252	R - 489	R14,921	R1,415
	October**	NA	8,676	NA	-142	295	15,186	1,432
AVERAGE		NA	8,670	NA	-77	336	15,287	

<sup>1</sup> Includes lease condensate.

<sup>2</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease.

<sup>3</sup> Ending stocks for 1973-1980 are totals as of December 31.

<sup>4</sup> Includes crude oil, natural gas plant production, other hydrocarbons and alcohol.

<sup>5</sup> Includes stocks located in the Strategic Petroleum Reserve.

Totals may not equal sum of components due to independent rounding.

NA = Not available. R = Revised data.

\* See Explanatory Note 5.1.

\*\* Italics denote preliminary data. See Explanatory Note 2.7.

Note: Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

**Crude Oil<sup>1</sup> and Petroleum Products Overview ( continued )**

		Imports <sup>2</sup>			Exports <sup>3</sup>			Net <sup>5</sup> Imports
		Total	Crude Oil <sup>4</sup>	Petroleum Products	Total	Crude Oil	Petroleum Products	
Thousand Barrels per Day								
1973	AVERAGE	6,256	3,244	3,012	231	2	229	6,025
1974	AVERAGE	6,112	3,477	2,635	221	3	218	5,892
1975	AVERAGE	6,056	4,105	1,951	209	6	204	5,846
1976	AVERAGE	7,313	5,287	2,026	223	8	215	7,090
1977	AVERAGE	8,807	6,615	2,193	243	50	193	8,565
1978	AVERAGE	8,363	6,356	2,008	362	158	204	8,002
1979	AVERAGE	8,456	6,519	1,937	472	235	237	7,984
1980	AVERAGE	6,909	5,263	1,646	544	287	258	6,365
1981	January	6,827	4,932	1,895	558	339	219	6,270
	February	6,772	4,873	1,899	569	198	371	6,203
	March	6,028	4,521	1,507	586	210	376	5,442
	April	5,668	4,338	1,330	570	198	372	5,098
	May	5,775	4,287	1,489	595	312	283	5,180
	June	5,435	4,061	1,375	420	123	297	5,015
	July	5,816	4,296	1,521	571	257	314	5,245
	August	5,767	4,179	1,588	644	204	440	5,123
	September	6,365	4,740	1,624	519	194	325	5,845
	October	5,959	4,380	1,579	738	226	512	5,221
	November	5,741	4,046	1,695	701	278	423	5,041
	December	5,843	4,137	1,706	656	189	467	5,187
		AVERAGE	5,996	4,396	1,599	595	228	367
1982	January	5,232	3,648	1,585	829	238	591	4,404
	February	4,691	2,949	1,742	804	304	499	3,887
	March	4,461	2,856	1,606	882	321	561	3,579
	April	4,286	2,813	1,474	786	174	611	3,501
	May	4,784	3,314	1,471	803	262	542	3,981
	June	5,227	3,782	1,445	703	94	609	4,524
	July	5,763	4,245	1,518	741	229	512	5,022
	August	5,156	3,820	1,336	858	304	554	4,298
	September*	R5,359	R3,603	R1,757	791	184	606	4,569
	October**	4,992	3,651	1,340	NA	NA	NA	NA
	AVERAGE	4,998	3,474	1,525	NA	NA	NA	NA

<sup>1</sup> Includes lease condensate.

<sup>2</sup> Includes shipments from United States possessions and territories.

<sup>3</sup> Includes shipments to United States possessions and territories.

<sup>4</sup> Includes crude oil for storage in the Strategic Petroleum Reserve.

<sup>5</sup> Net Imports = Imports minus Exports.

Totals may not equal sum of components due to independent rounding.

NA = Not available, R = Revised data.

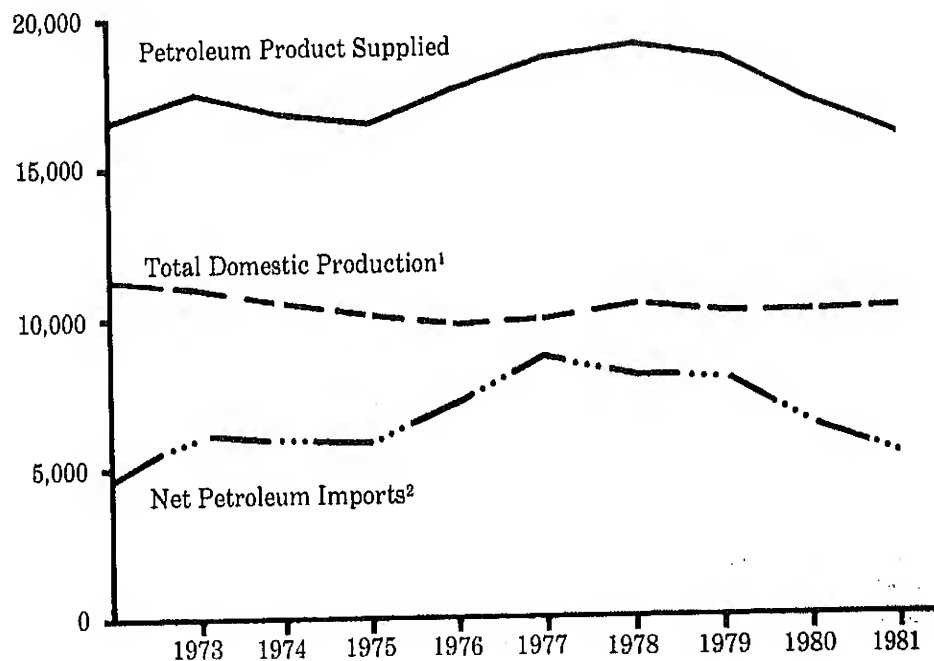
\* See Explanatory Note 5.1.

\*\* Italics denote preliminary data. See Explanatory Note 2.7.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

## Petroleum Overview, Annual (Thousand Barrels per Day)



<sup>1</sup>Includes crude oil and natural gas plant production.

<sup>2</sup>Includes SPR imports.

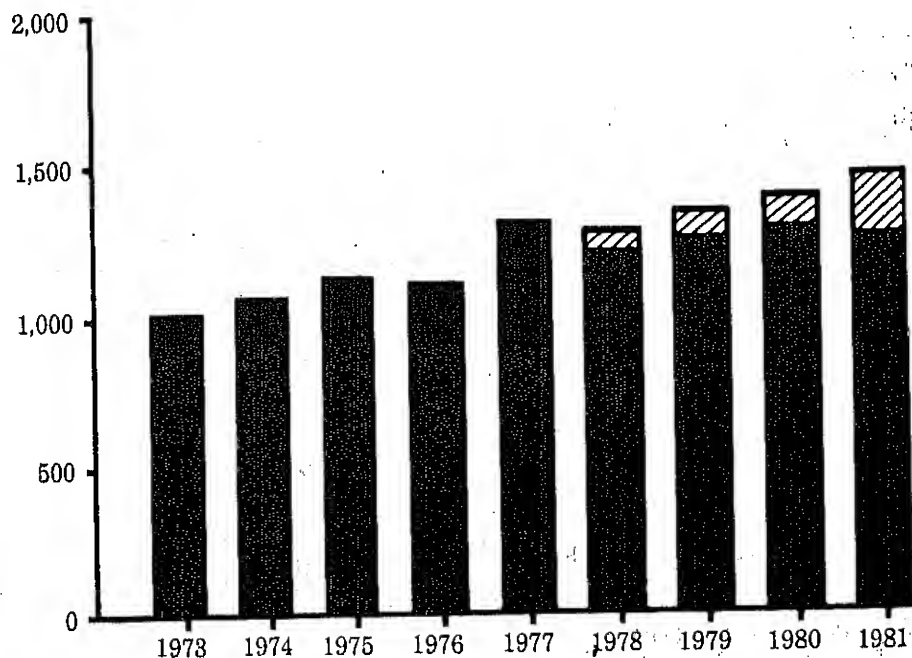
Source table: "Crude Oil and Petroleum Products Overview."

## Crude Oil and Petroleum Products Ending Stocks, Annual (Millions of Barrels)

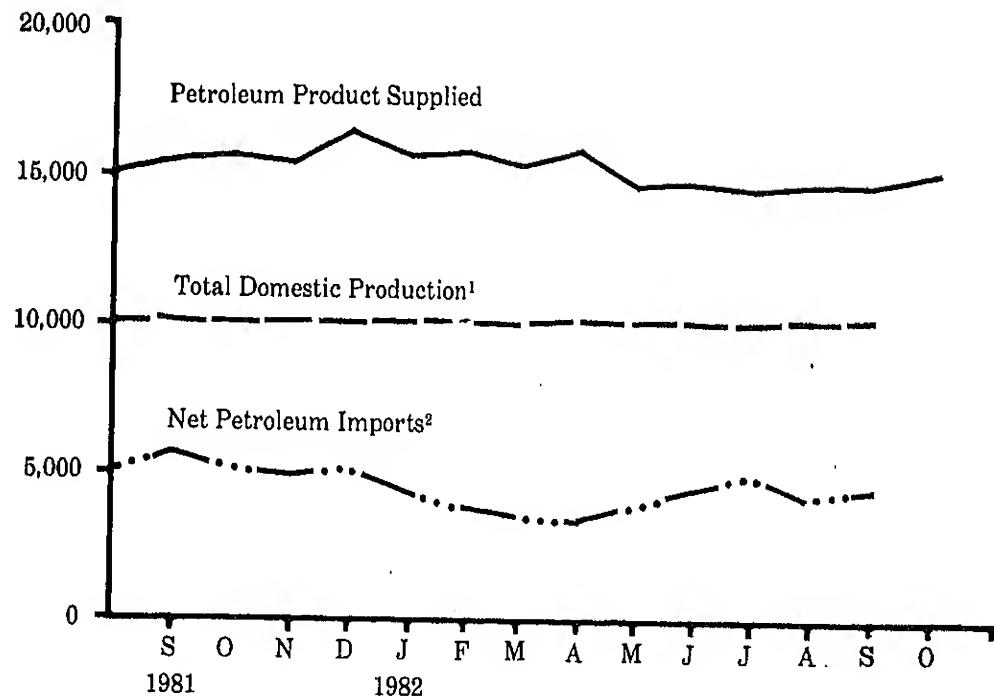
### Legend

▨ SPR Crude Oil

■ Crude Oil and Petroleum Products, Excluding SPR



## Petroleum Overview, Monthly (Thousand Barrels per Day)



<sup>1</sup>Includes crude oil and natural gas plant production.

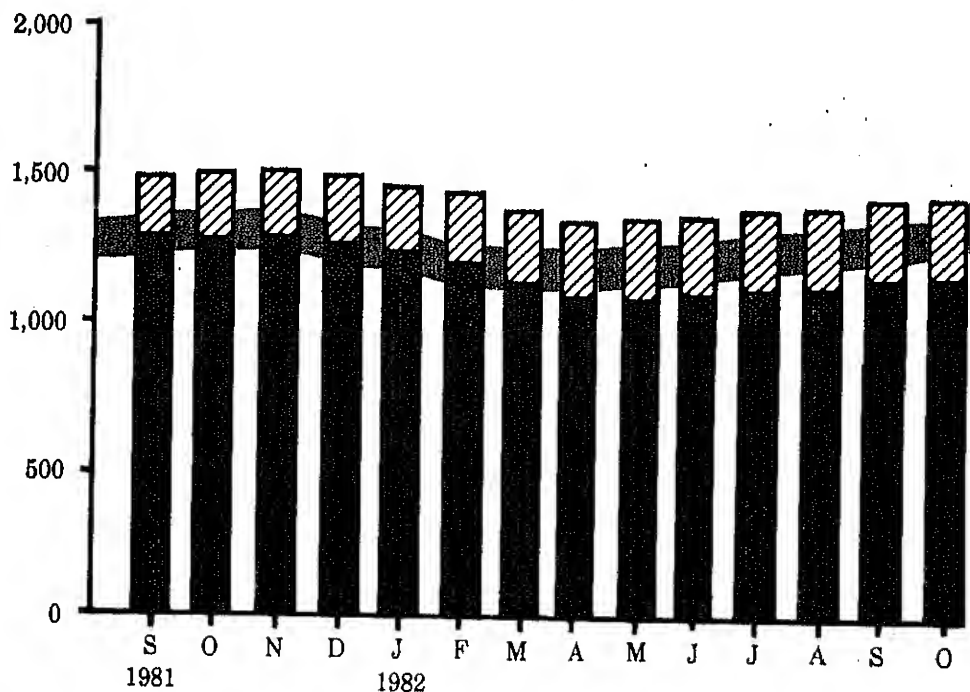
<sup>2</sup>Includes SPR imports.

Source table: "Crude Oil and Petroleum Products Overview."

## Crude Oil and Petroleum Product Ending Stocks, Monthly (Millions of Barrels)

### Legend

- SPR Crude Oil
- Crude Oil and Petroleum Products, Excluding SPR
- Average Stock Range<sup>1</sup>



<sup>1</sup>Average stock range (excluding SPR) based on 3 years of data. See Explanatory Note 2.5.

Source tables: "Crude Oil and Petroleum Products Overview" and "Crude Oil Supply and Disposition."



# Crude Oil<sup>1</sup> Supply and Disposition

		Supply						
		Field Production		Imports <sup>2</sup>			Stock Withdrawal <sup>3</sup>	
		Total Domestic	Alaskan	Total	SPR <sup>4</sup>	Other	SPR <sup>4</sup>	Other
		Thousand Barrels per Day						
1973	AVERAGE	9,208	198	3,244		3,244		11
1974	AVERAGE	8,774	193	3,477		3,477		-62
1975	AVERAGE	8,375	191	4,105		4,105		-17
1976	AVERAGE	8,132	173	5,287		5,287		-39
1977	AVERAGE	8,245	464	6,615	21	6,594	-20	-150
1978	AVERAGE	8,707	1,229	6,356	162	6,195	-163	84
1979	AVERAGE	8,552	1,401	6,519	67	6,452	-67	-61
1980	AVERAGE	8,597	1,617	5,263	44	5,219	-45	-52
1981	January	8,540	1,606	4,932	106	4,826	-151	201
	February	8,604	1,619	4,873	80	4,793	-127	-150
	March	8,613	1,618	4,521	140	4,382	-155	-477
	April	8,557	1,608	4,338	272	4,066	-444	-151
	May	8,501	1,580	4,287	386	3,901	-513	122
	June	8,629	1,632	4,061	318	3,743	-434	299
	July	8,500	1,605	4,296	175	4,121	-324	-36
	August	8,583	1,602	4,179	257	3,922	-372	769
	September	8,604	1,607	4,740	435	4,305	-486	201
	October	8,563	1,596	4,380	453	3,927	-501	-259
	November	8,586	1,614	4,046	271	3,774	-259	-66
	December	8,585	1,623	4,137	165	3,971	-252	82
	AVERAGE	8,572	1,609	4,396	256	4,141	-336	46
1982	January	8,669	1,712	3,648	170	3,478	-159	-77
	February	8,690	1,715	2,949	159	2,790	-213	-3
	March	8,597	1,702	2,856	185	2,671	-235	170
	April	8,652	1,687	2,813	190	2,623	-233	341
	May	8,660	1,725	3,314	204	3,110	-176	225
	June	8,681	1,675	3,782	105	3,678	-105	191
	July	8,649	1,715	4,245	97	4,147	-97	-58
	August	8,701	1,699	3,820	208	3,611	-208	-233
	September*	R8,733	R1,707	R3,603	R139	R3,463	- R143	R395
	October**	8,676	1,677	3,651	211	3,440	-223	81
	AVERAGE	8,670	1,701	3,474	167	3,307	179	102

<sup>1</sup> Includes lease condensate.

<sup>2</sup> Includes shipments from United States possessions and territories.

<sup>3</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease.

<sup>4</sup> Strategic Petroleum Reserve.

Totals may not equal sum of components due to independent rounding.

NA = Not available. R = Revised data.

\* See Explanatory Note 5.2.

\*\* Italics denote preliminary data. See Explanatory Note 2.7.

Note: Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

Crude Oil<sup>1</sup> Supply and Disposition ( continued )

		Supply (Continued)		Disposition		Ending Stocks <sup>2</sup>		
		Unac- counted for Crude Oil	Crude Used Directly and Losses	Refinery Inputs	Exports <sup>3</sup>	Total Crude Oil	SPR <sup>4</sup>	Other Primary
		Thousand Barrels per Day				Millions of Barrels		
1973	AVERAGE	3	-32	12,431	2	242		242
1974	AVERAGE	-25	-28	12,133	3	265		265
1975	AVERAGE	17	-30	12,442	6	271		271
1976	AVERAGE	77	-33	13,416	8	285		285
1977	AVERAGE	-6	-30	14,602	50	348	7	340
1978	AVERAGE	-57	-30	14,739	158	376	67	309
1979	AVERAGE	-11	-29	14,648	235	430	91	339
1980	AVERAGE	34	-28	13,481	287	466	108	358
1981	January	113	-49	13,247	339	486	112	374
	February	-41	-58	12,902	198	494	116	378
	March	154	-63	12,383	210	514	121	393
	April	51	-62	12,091	198	532	134	397
	May	286	-62	12,309	312	544	150	394
	June	49	-65	12,415	123	548	163	385
	July	147	-65	12,261	257	559	173	386
	August	16	-63	12,908	204	647	185	362
	September	-295	-65	12,505	194	555	199	358
	October	166	-66	12,057	226	579	215	364
	November	279	-68	12,240	278	589	223	366
	December	52	-67	12,349	189	594	230	363
	AVERAGE	83	-63	12,470	228			
1982	January	-138	-66	11,638	238	606	235	371
	February	199	-66	11,252	304	612	241	371
	March	278	-68	11,277	321	614	249	366
	April	56	-68	11,386	174	611	256	355
	May	105	-65	11,801	262	609	261	348
	June	110	-67	12,498	94	607	264	343
	July	1	-63	12,447	229	612	267	345
	August	140	-59	11,858	304	625	274	352
	September*	-218	-59	R12,126	184	R618	278	R340
	October**	NA	NA	11,878	NA	639	295	355
	AVERAGE	NA	NA	11,820	NA			

<sup>1</sup> Includes lease condensate.

<sup>2</sup> Ending stocks for 1973-1980 are totals as of December 31.

<sup>3</sup> Includes shipments to United States possessions and territories.

<sup>4</sup> Strategic Petroleum Reserve.

Totals may not equal sum of components due to independent rounding.

NA = Not available. R = Revised data.

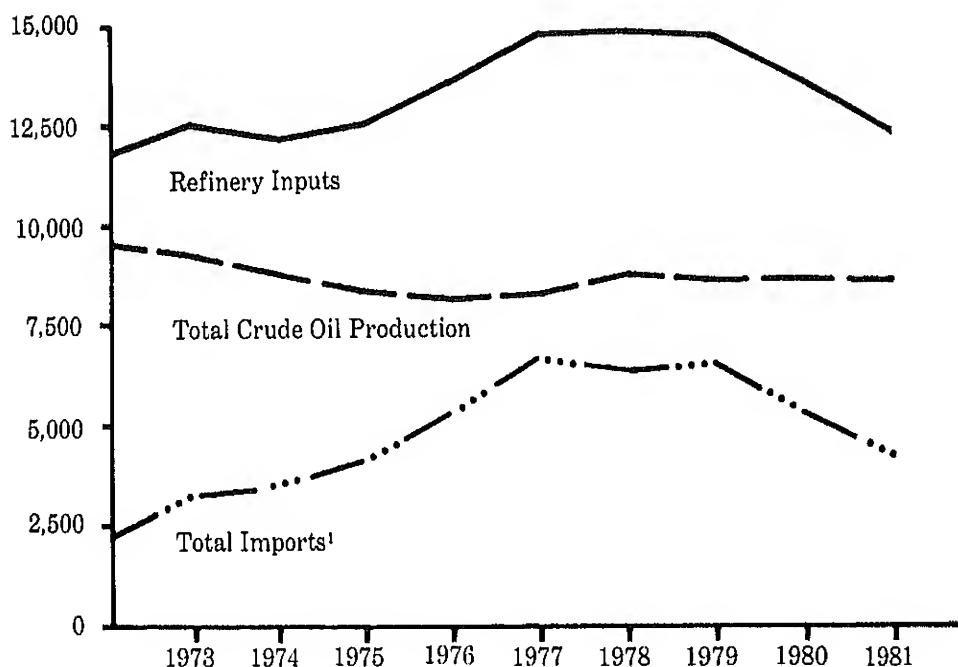
\* See Explanatory Note 5.2.

\*\* Italics denote preliminary data. See Explanatory Note 2.7.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

# Crude Oil Supply and Disposition, Annual (Thousand Barrels per Day)



¹Includes SPR imports.

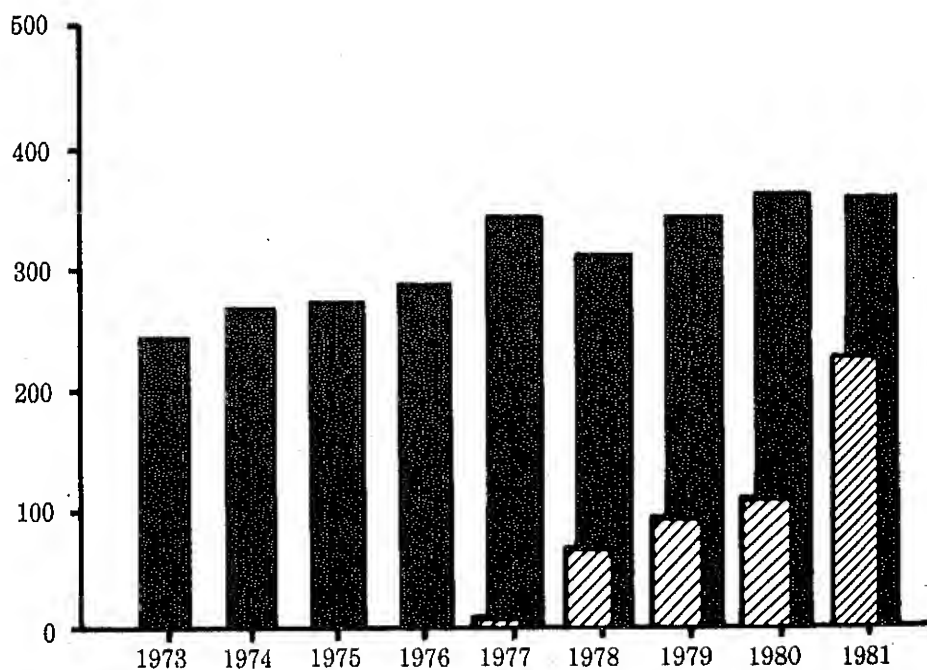
Source table: "Crude Oil Supply and Disposition."

## Crude Oil Ending Stocks, Annual (Millions of Barrels)

### Legend

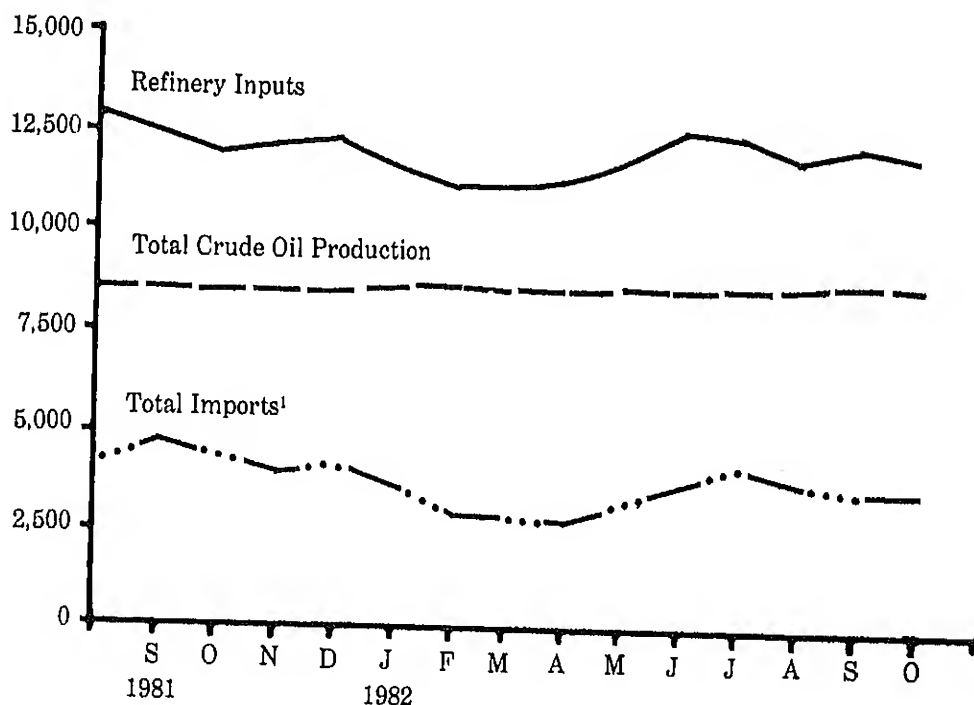
▨ SPR

■ Other Primary



Source table: "Crude Oil Supply and Disposition."

### Crude Oil Supply and Disposition, Monthly (Thousand Barrels per Day)



¹Includes SPR imports.

Source table: "Crude Oil Supply and Disposition."

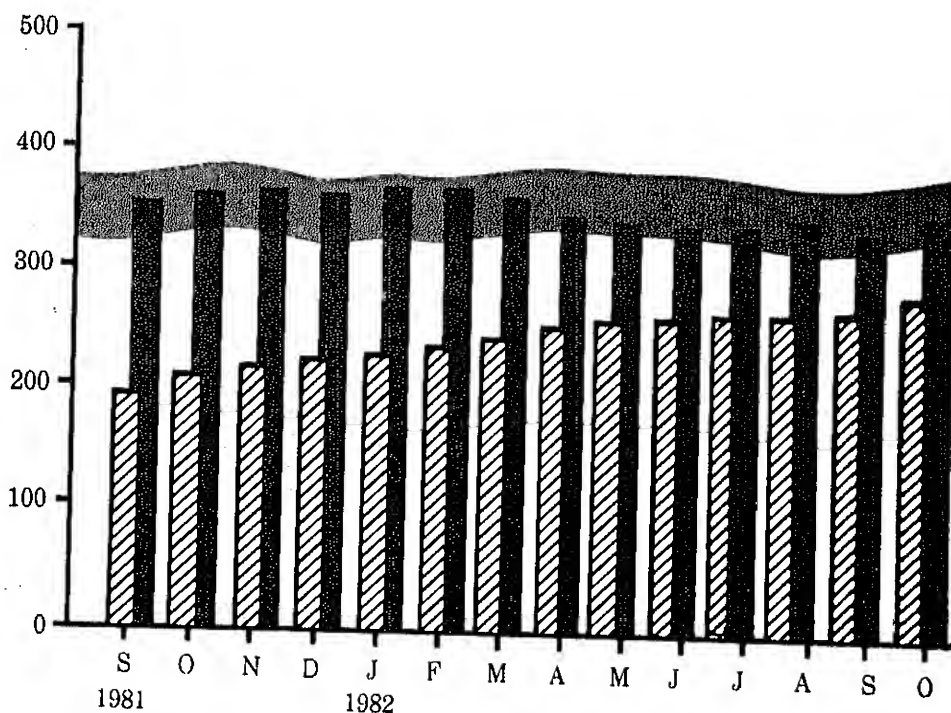
### Crude Oil Ending Stocks, Monthly (Millions of Barrels)

**Legend**

SPR

Other Primary

Average Stock Range¹



¹Average stock range (excluding SPR) based on 3 years of data. See Explanatory Note 2.5.

Source table: "Crude Oil Supply and Disposition."

# Finished Motor Gasoline Supply and Disposition

		Supply			Disposition				Ending Stocks	
		Total Produc- tion	Imports <sup>1</sup>	Stock With- drawal <sup>1 2</sup>	Exports	Product Supplied			Total Motor Gasoline <sup>3</sup>	Finished Motor Gasoline
						Total	Unleaded <sup>4</sup>	Unleaded		
Thousand Barrels per Day								Percent of Total	Millions of Barrels	
1973	AVERAGE	6,535	134	9	4	6,674	NA	NA	209	
1974	AVERAGE	6,360	204	-24	2	6,537	NA	NA	218	
1975	AVERAGE	6,520	184	-28	2	6,675	NA	NA	235	
1976	AVERAGE	6,841	131	10	3	6,978	NA	NA	231	
1977	AVERAGE	7,033	217	-72	2	7,177	1,976	27.5	258	
1978	AVERAGE	7,169	190	54	1	7,412	2,521	34.0	238	
1979	AVERAGE	6,852	181	2	( <sup>5</sup> )	7,034	2,798	39.8	237	
1980	AVERAGE	6,506	140	-66	1	6,579	3,067	46.6	261	
1981	January	6,715	138	-421	( <sup>5</sup> )	6,431	3,141	48.8	276	227
	February	6,308	111	-118	1	6,301	3,095	49.1	284	230
	March	6,213	171	-81	( <sup>5</sup> )	6,303	3,097	49.1	285	232
	April	6,114	186	303	( <sup>5</sup> )	6,602	3,284	49.7	272	223
	May	6,122	150	344	1	6,615	3,115	47.1	259	213
	June	6,220	186	622	1	7,028	3,419	48.6	242	194
	July	6,405	151	268	( <sup>5</sup> )	6,823	3,424	50.2	228	186
	August	6,611	124	-95	3	6,637	3,344	50.4	233	189
	September	6,564	169	-70	2	6,662	3,338	50.1	237	191
	October	6,426	147	7	3	6,578	3,257	49.5	236	190
	November	6,564	148	-338	1	6,373	3,198	50.2	248	201
	December	6,586	197	-91	11	6,681	3,444	51.5	253	203
		AVERAGE	6,405	157	28	2	6,588	3,264	49.5	
1982	January	6,181	114	-358	18	5,920	3,033	51.2	262	214
	February	5,917	133	28	8	6,070	3,145	51.8	262	213
	March	6,004	183	469	44	6,612	3,396	51.4	248	199
	April	6,104	177	641	33	6,890	3,494	50.7	223	180
	May	6,322	163	188	23	6,650	3,415	51.3	215	174
	June	6,767	195	-136	14	6,812	3,561	52.3	220	178
	July	6,788	200	-165	24	6,799	3,574	52.6	226	183
	August	6,447	284	-60	16	6,655	3,520	52.9	226	185
	September*	R6,530	215	-217	22	R6,507	3,385	52.0	R234	191
	October**	6,271	NA	NA	NA	6,503	NA	NA	228	NA
	AVERAGE	6,336	NA	NA	NA	6,545	NA	NA		

<sup>1</sup> Beginning in 1981 excludes blending components.

<sup>2</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease.

<sup>3</sup> Includes motor gasoline blending components. Ending stocks for 1973-1980 are totals as of December 31.

<sup>4</sup> Includes gasohol.

Totals may not equal sum of components due to independent rounding.

(<sup>5</sup>) = Less than 500 barrels. NA = Not available. R = Revised data.

\* See Explanatory Note 5.3.

\*\* Italics denote preliminary data. See Explanatory Note 2.7.

Notes: Beginning in January 1981, survey forms were modified. See Explanatory Note 4 on Changes for the effects on motor gasoline statistics.

Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

# Distillate Fuel Oil Supply and Disposition

		Supply				Disposition		Ending Stocks <sup>1</sup>
		Total Production	Imports	Stock Withdrawal <sup>2</sup>	Crude Used Directly	Exports	Product Supplied	
		Thousand Barrels per Day						Millions of Barrels
1973	AVERAGE	2,822	392	-115	2	9	3,092	196
1974	AVERAGE	2,669	289	-9	2	2	2,948	200
1975	AVERAGE	2,654	155	40	2	1	2,851	209
1976	AVERAGE	2,924	146	62	1	1	3,133	186
1977	AVERAGE	3,278	250	-176	1	1	3,352	250
1978	AVERAGE	3,167	173	93	1	3	3,432	216
1979	AVERAGE	3,153	193	-34	1	3	3,311	229
1980	AVERAGE	2,662	142	64	1	3	2,866	205
1981	January	2,989	273	836	11	( <sup>3</sup> )	4,109	179
	February	2,809	325	246	11	17	3,373	173
	March	2,484	147	264	9	( <sup>3</sup> )	2,904	164
	April	2,418	116	-9	10	3	2,532	165
	May	2,454	179	-232	10	( <sup>3</sup> )	2,411	172
	June	2,501	225	-270	9	( <sup>3</sup> )	2,464	180
	July	2,395	179	-204	10	2	2,378	186
	August	2,656	174	-450	8	( <sup>3</sup> )	2,388	200
	September	2,610	129	-235	10	1	2,513	207
	October	2,485	119	197	9	5	2,803	201
	November	2,716	124	36	11	6	2,880	200
	December	2,856	95	277	11	26	3,212	192
	AVERAGE	2,613	173	38	10	5	2,829	
1982	January	2,615	96	780	10	90	3,410	166
	February	2,447	130	689	11	90	3,187	147
	March	2,294	48	612	10	84	2,881	128
	April	2,357	59	631	13	64	2,996	109
	May	2,618	74	-184	10	75	2,444	114
	June	2,731	100	-335	10	55	2,450	125
	July	2,734	124	-761	11	24	2,084	148
	August	2,526	79	-346	10	40	2,228	159
	September*	R2,658	R59	R-77	12	139	R2,514	R161
	October**	2,897	73	-354	NA	NA	2,593	165
	AVERAGE	2,589	84	59	NA	NA	2,674	

<sup>1</sup> Ending stocks for 1973 - 1980 are totals as of December 31.

<sup>2</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease. Totals may not equal sum of components due to independent rounding.

(<sup>3</sup>) = Less than 500 barrels per day. NA = Not available. R = Revised data.

\* See Explanatory Note 5.4.

\*\* Italics denote preliminary data. See Explanatory Note 2.7.

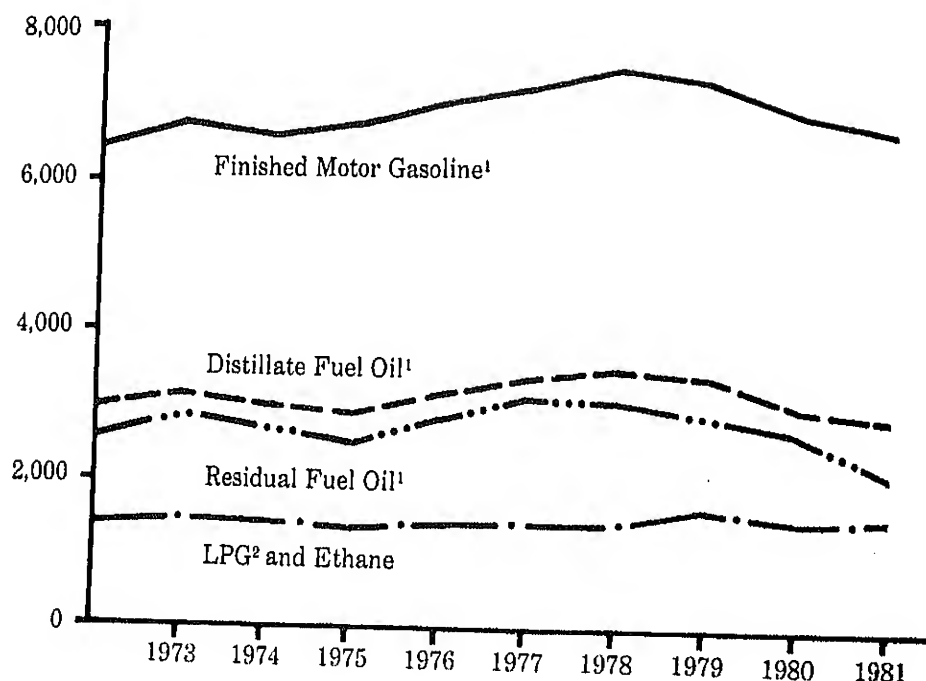
Note: Beginning in January 1981, survey forms were modified. See Explanatory Note 4 on Changes for the effects on Distillate Fuel Oil statistics.

Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

## Products Supplied, Annual (Thousand Barrels per Day)



<sup>1</sup>Figures for 1979 and 1980 recast to account for data system changes in 1981. See Explanatory Note 4.

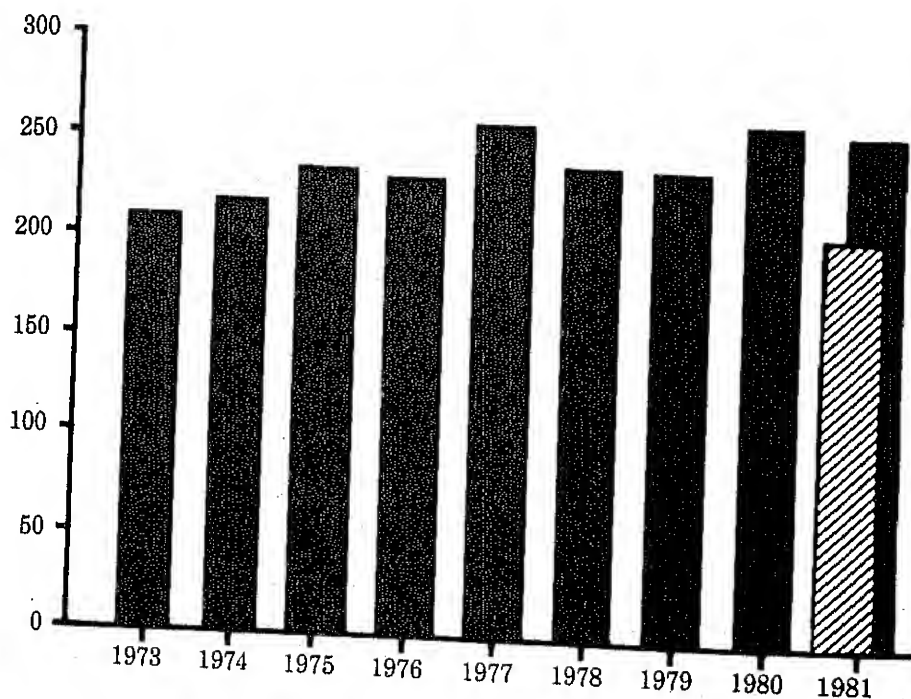
<sup>2</sup>Liquefied Petroleum Gases.

Source tables: "Finished Motor Gasoline Supply and Disposition," "Distillate Fuel Oil Supply and Disposition," "Residual Fuel Oil Supply and Disposition," "Liquefied Petroleum Gases and Ethane Supply and Disposition."

## Motor Gasoline<sup>1</sup> Ending Stocks, Annual (Millions of Barrels)

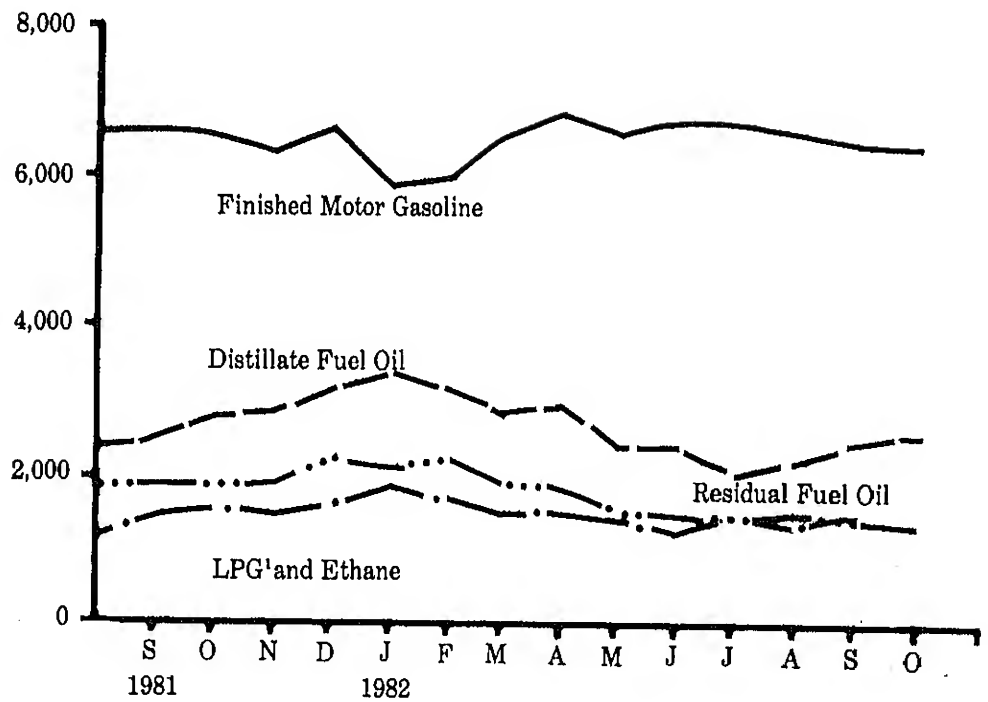
### Legend

- Total
- ▨ Finished



asoline

### Products Supplied, Monthly (Thousand Barrels per Day)



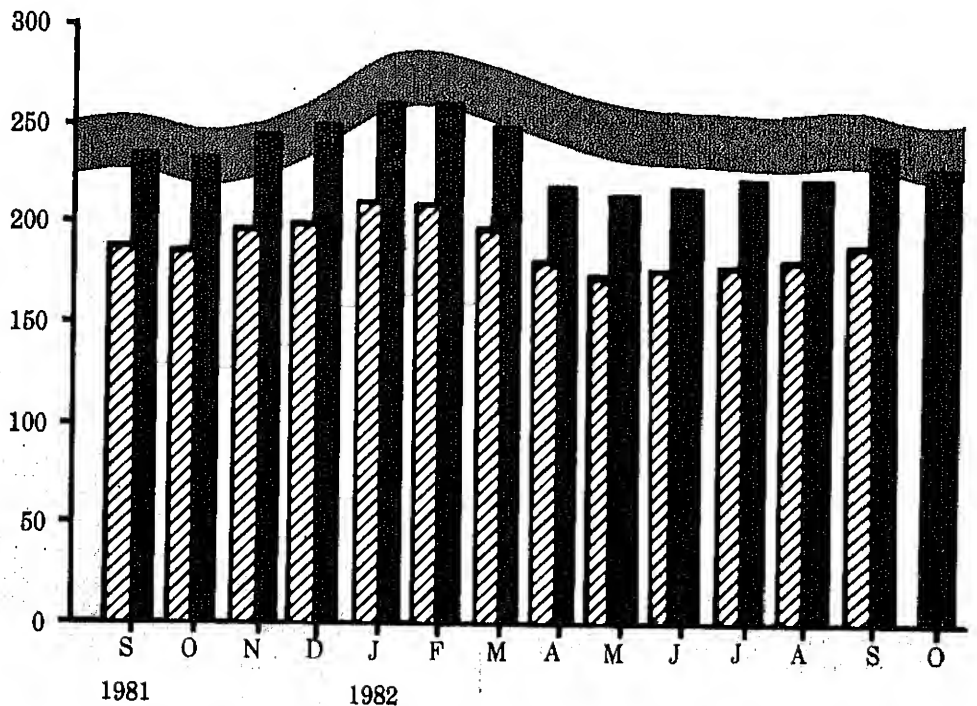
<sup>1</sup>Liquefied Petroleum Gases.

Source tables: "Finished Motor Gasoline Supply and Disposition," "Distillate Fuel Oil Supply and Disposition," "Residual Fuel Oil Supply and Disposition," "Liquefied Petroleum Gases and Ethane Supply and Disposition."

### Motor Gasoline Ending Stocks, Monthly (Millions of Barrels)

#### Legend

- Total Motor Gasoline<sup>1</sup>
- ▨ Finished Motor Gasoline
- Average Stock Range<sup>2</sup>



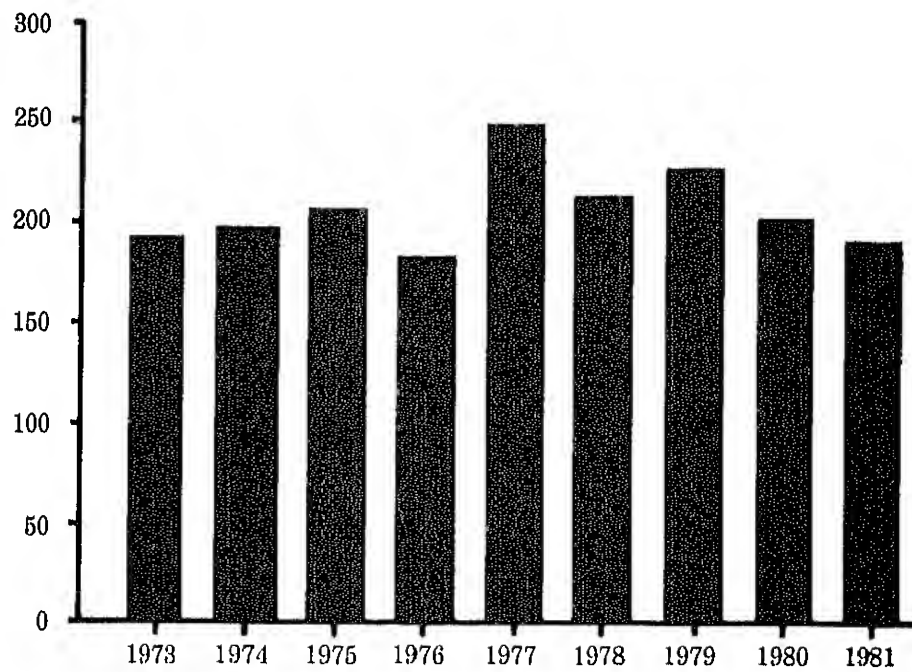
<sup>1</sup>Includes finished motor gasoline blending components.

<sup>2</sup>Average stock range for total motor gasoline based on 3 years of data. See Explanatory Note 2.5.

Source table: "Finished Motor Gasoline Supply and Disposition."

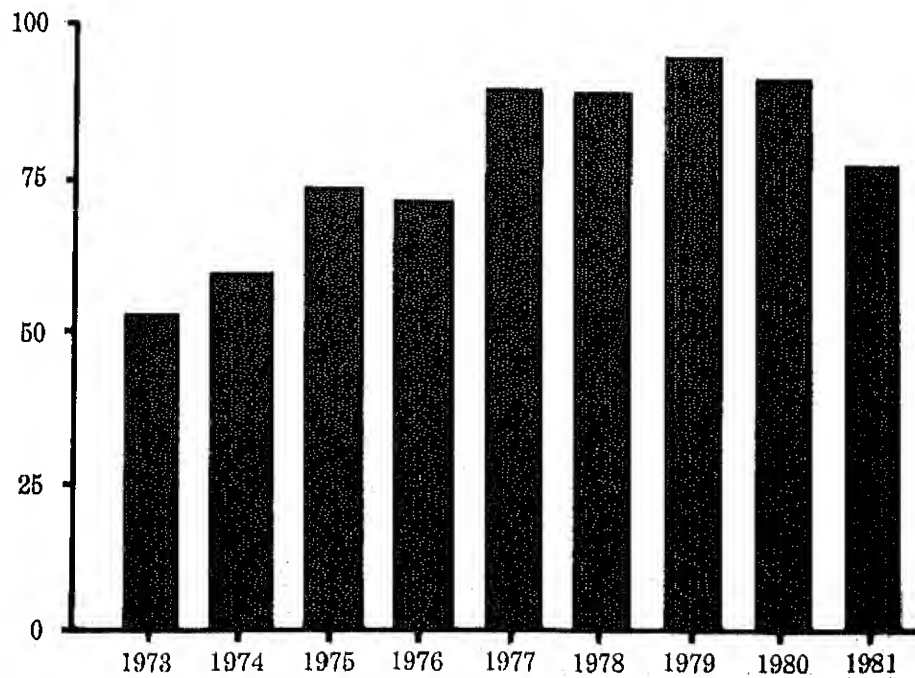


### Distillate Fuel Oil Ending Stocks, Annual (Millions of Barrels)



Source table: "Distillate Fuel Oil Supply and Disposition."

### Residual Fuel Oil Ending Stocks, Annual (Millions of Barrels)



Source table: "Residual Fuel Oil Supply and Disposition."

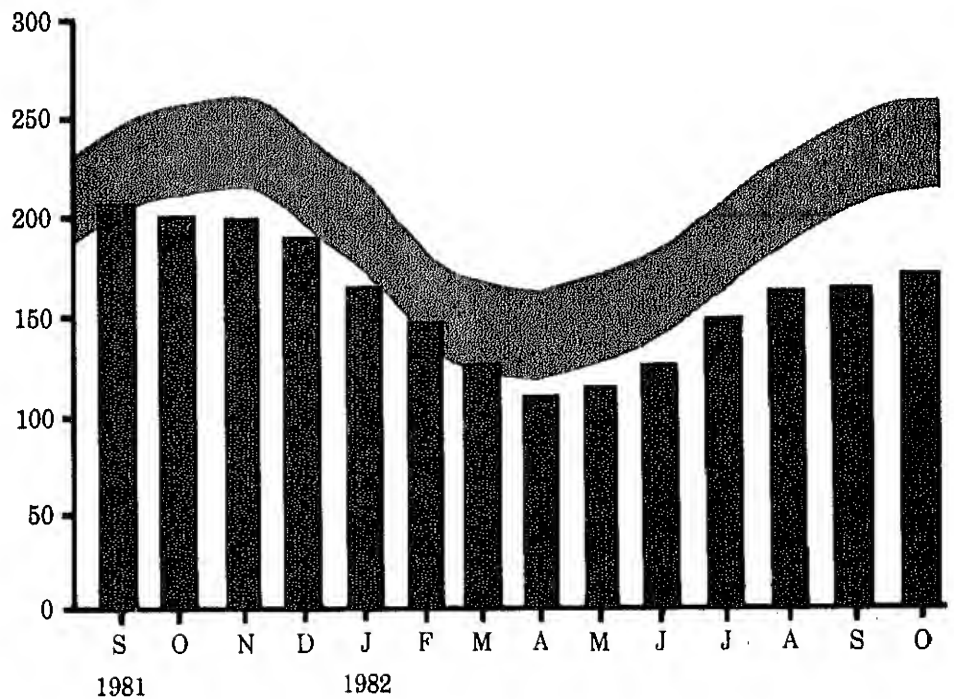
## Distillate Fuel Oil Ending Stocks, Monthly (Millions of Barrels)

### Legend

■ Average Stock Range<sup>1</sup>

<sup>1</sup>Average stock range based on 3 years of data. See Explanatory Note 2.5.

Source table: "Distillate Fuel Oil Supply and Disposition."



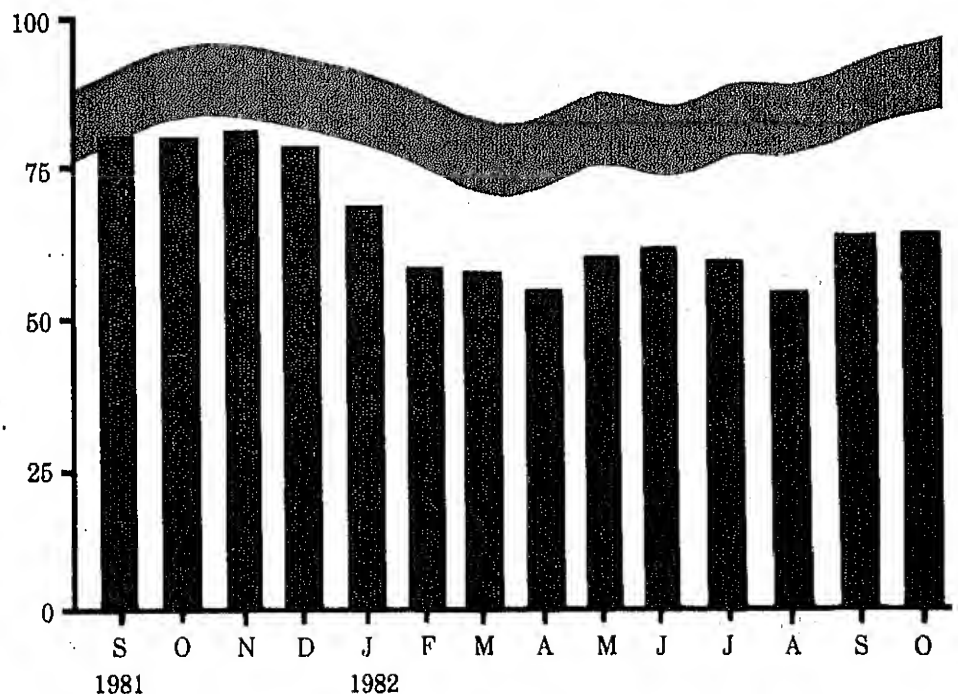
## Residual Fuel Oil Ending Stocks, Monthly (Millions of Barrels)

### Legend

■ Average Stock Range<sup>1</sup>

<sup>1</sup>Average stock range based on 3 years of data. See Explanatory Note 2.5.

Source table: "Residual Fuel Oil Supply and Disposition."



# Residual Fuel Oil Supply and Disposition

		Supply				Disposition		Ending Stocks <sup>1</sup>
		Total Production	Imports	Stock Withdrawal <sup>2</sup>	Crude Used Directly	Exports	Products Supplied	
		Thousand Barrels per Day						
								Millions of Barrels
1973	AVERAGE	971	1,853	5	17	23	2,822	53
1974	AVERAGE	1,070	1,587	-17	13	14	2,639	60
1975	AVERAGE	1,235	1,223	2	15	15	2,462	74
1976	AVERAGE	1,377	1,413	5	17	12	2,801	72
1977	AVERAGE	1,754	1,359	-48	13	6	3,071	90
1978	AVERAGE	1,667	1,355	-1	13	13	3,023	90
1979	AVERAGE	1,687	1,151	-15	12	9	2,826	96
1980	AVERAGE	1,580	939	10	12	33	2,508	92
1981	January	1,612	1,015	302	32	65	2,896	82
	February	1,565	954	150	44	125	2,588	78
	March	1,424	699	100	48	145	2,126	75
	April	1,320	584	66	49	151	1,868	73
	May	1,223	741	-170	49	25	1,817	78
	June	1,232	540	291	49	76	2,037	69
	July	1,174	830	2	48	82	1,971	69
	August	1,231	819	-179	50	69	1,852	75
	September	1,292	841	-176	51	126	1,882	80
	October	1,238	786	8	54	202	1,884	80
	November	1,227	880	-49	53	203	1,909	81
	December	1,329	916	110	52	157	2,250	78
	AVERAGE	1,321	800	37	48	118	2,088	
1982	January	1,183	821	328	53	235	2,150	68
	February	1,136	928	358	53	213	2,261	58
	March	1,121	910	26	53	197	1,912	57
	April	1,162	762	124	52	234	1,867	54
	May	1,127	738	-175	52	191	1,551	59
	June	1,077	643	-49	50	217	1,504	61
	July	1,029	576	51	49	239	1,466	59
	August	1,007	519	200	47	235	1,538	53
	September*	R1,007	R871	R - 302	44	148	R1,472	R62
	October**	981	658	31	NA	NA	1,419	62
	AVERAGE	1,083	741	51	NA	NA	1,710	

<sup>1</sup> Ending Stocks for 1973-1980 are totals as of December 31.

<sup>2</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease. Totals may not equal sum of components due to independent rounding.

NA = Not available. R = Revised data.

\* See Explanatory Note 5.4.

\*\* Italics denote preliminary data. See Explanatory Note 2.7.

Notes: Beginning in January 1981, survey forms were modified.

See Explanatory Note 4 on changes for the effects on residual fuel oil statistics.

Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage.

Geographic Coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

# Liquefied Petroleum Gases and Ethane Supply and Disposition

		Supply			Disposition			Ending Stocks <sup>1</sup>
		Total Production	Imports	Stock Withdrawal <sup>2</sup>	Refinery Inputs	Exports	Product Supplied	
		Thousand Barrels per Day						Millions of Barrels
1973	AVERAGE	1,600	132	-35	220	27	1,449	99
1974	AVERAGE	1,565	123	-38	220	25	1,406	113
1975	AVERAGE	1,527	112	-35	246	26	1,333	125
1976	AVERAGE	1,536	130	24	260	25	1,404	116
1977	AVERAGE	1,566	161	-55	233	18	1,422	136
1978	AVERAGE	1,537	123	12	239	20	1,413	132
1979	AVERAGE	1,556	217	70	236	15	1,592	111
1980	AVERAGE	1,536	216	-27	233	21	1,469	120
1981	January	1,617	306	363	352	21	1,913	117
	February	1,593	327	173	303	21	1,769	112
	March	1,551	260	-4	257	20	1,530	112
	April	1,586	214	-236	231	26	1,308	119
	May	1,587	189	-258	220	19	1,279	127
	June	1,567	206	-208	237	24	1,304	133
	July	1,507	213	-258	215	17	1,229	141
	August	1,592	195	-242	235	149	1,160	149
	September	1,622	199	-75	287	21	1,438	151
	October	1,593	287	72	320	76	1,556	149
	November	1,571	280	86	383	58	1,495	146
	December	1,468	255	379	428	50	1,624	135
	AVERAGE	1,571	244	-18	289	42	1,466	
1982	January	1,546	314	480	398	67	1,873	122
	February	1,476	291	310	327	51	1,699	114
	March	1,523	223	145	289	74	1,528	109
	April	1,566	188	107	257	77	1,527	106
	May	1,583	186	-61	235	43	1,431	108
	June	1,571	192	-109	262	106	1,286	111
	July	1,556	227	-5	253	37	1,487	111
	August	1,591	125	-44	254	61	1,357	112
	September*	1,606	247	33	273	85	1,528	111
	AVERAGE	1,558	221	94	283	67	1,523	

<sup>1</sup> Ending stocks for 1973 - 1980 are totals as of December 31.

<sup>2</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease.

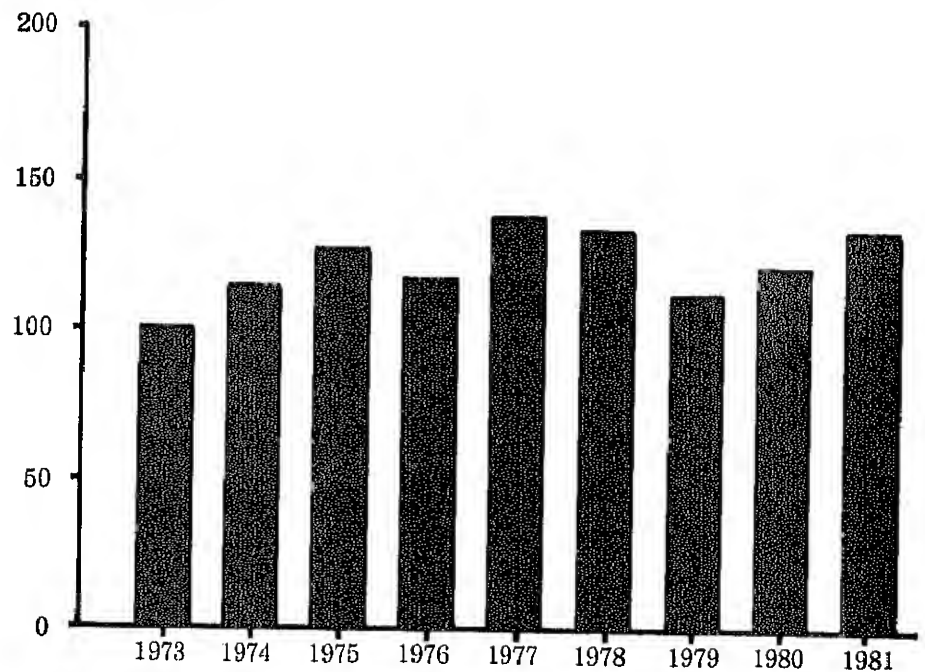
Totals may not equal sum of components due to independent rounding.

\* See Explanatory Note 5.5.

Note: Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage. Geographic coverage: The 50 United States and the District of Columbia.

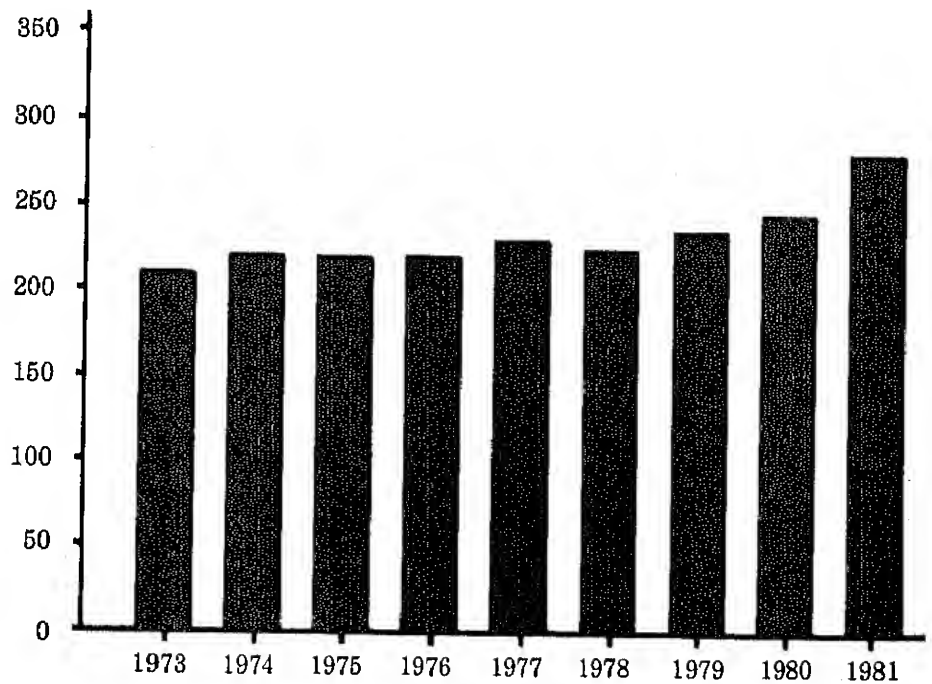
Sources: See "Sources" at the end of this section.

**Liquefied Petroleum Gases and Ethane Ending Stocks, Annual  
(Millions of Barrels)**



Source table: "Liquefied Petroleum Gases and Ethane Supply and Disposition."

**Other Petroleum Products<sup>1</sup> Ending Stocks, Annual  
(Millions of Barrels)**




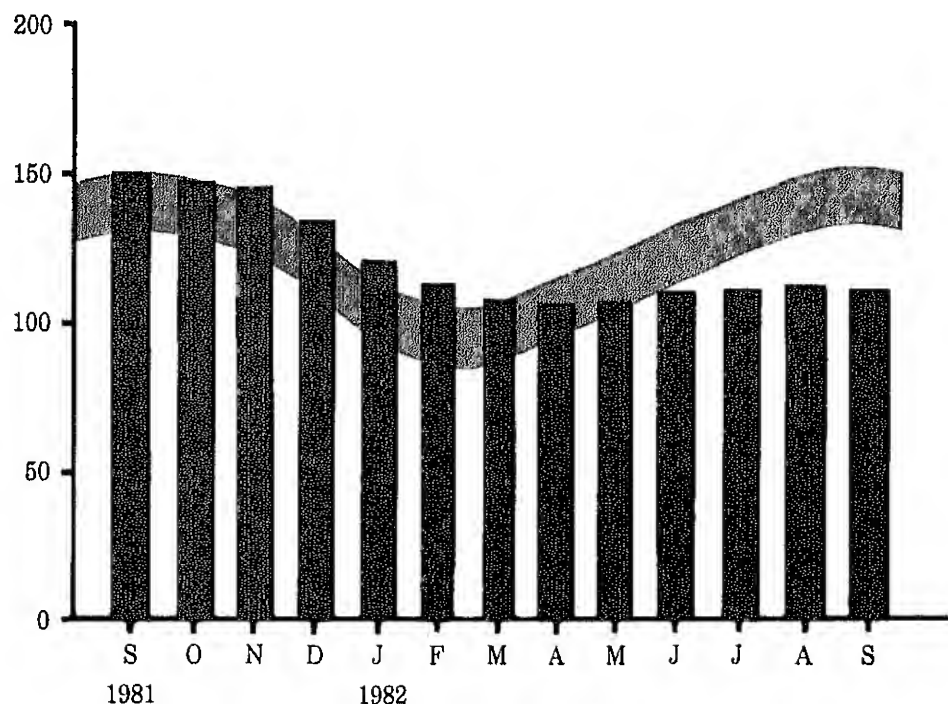
<sup>1</sup>Includes natural gasoline and isopentane, unfinished oils, gasoline blending components, jet fuels, kerosene, lubricants, and asphalt. Some gasoline blending components not included prior to 1981.

Source table: "Other Petroleum Products Supply and Disposition."

## Liquefied Petroleum Gases and Ethane Ending Stocks, Monthly (Millions of Barrels)

### Legend

 Average Stock Range<sup>1</sup>




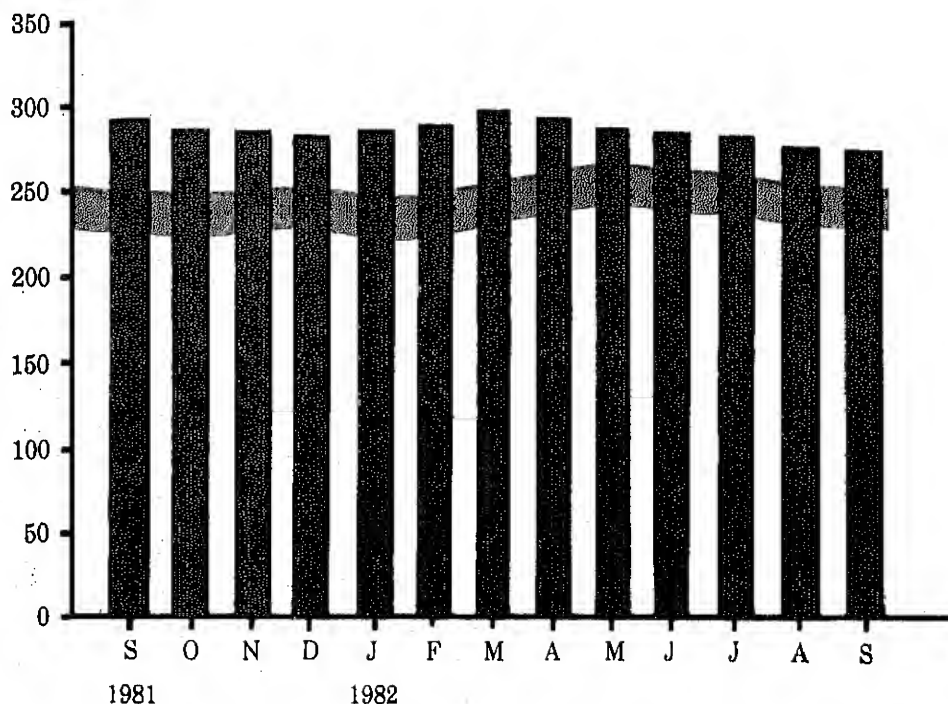
<sup>1</sup>Average stock range based on 3 years of data. See Explanatory Note 2.5.

Source table: "Liquefied Petroleum Gases and Ethane Supply and Disposition."

## Other Petroleum Products<sup>1</sup> Endings Stocks, Monthly (Millions of Barrels)

### Legend

 Average Stock Range<sup>2</sup>



<sup>1</sup>Includes natural gasoline and isopentane, unfinished oils, gasoline blending components, jet fuels, kerosene, lubricants, and asphalt.

<sup>2</sup>Average stock range based on 8 years of data. See Explanatory Note 2.5.

Source table: "Other Petroleum Products Supply and Disposition."

# Other Petroleum Products<sup>1</sup> Supply and Disposition

		Supply			Disposition			Ending Stocks <sup>2</sup>
		Total Production	Imports	Stock Withdrawal <sup>3</sup>	Refinery Inputs	Exports	Products Supplied	
		Thousand Barrels per Day						Millions of Barrels
1973	AVERAGE	3,693	502	-9	750	166	3,270	208
1974	AVERAGE	3,558	432	-28	665	174	3,123	218
1975	AVERAGE	3,424	277	-2	537	160	3,002	219
1976	AVERAGE	3,643	206	-5	524	175	3,145	220
1977	AVERAGE	3,912	205	-27	514	165	3,410	230
1978	AVERAGE	4,046	166	14	492	167	3,568	225
1979	AVERAGE	4,153	195	-37	352	209	3,749	238
1980	AVERAGE	3,956	210	-23	311	198	3,634	247
1981	January	3,821	162	80	851	132	3,081	296
	February	3,723	182	-200	538	208	2,958	302
	March	3,722	230	-55	642	210	3,043	304
	April	3,711	230	24	733	192	3,040	303
	May	3,892	229	-58	594	238	3,231	305
	June	3,925	218	-29	656	197	3,261	306
	July	3,852	149	284	791	212	3,282	297
	August	3,876	276	-33	676	219	3,225	298
	September	3,718	285	215	883	176	3,159	291
	October	3,503	241	193	710	227	3,000	285
	November	3,579	262	33	784	154	2,935	284
	December	3,543	243	71	805	223	2,829	282
	AVERAGE	3,739	226	46	723	199	3,088	
1982	January	3,181	240	-102	602	180	2,536	284
	February	3,364	260	-116	646	138	2,724	287
	March	3,485	241	-204	734	161	2,627	294
	April	3,394	287	91	801	204	2,767	291
	May	3,296	309	198	823	210	2,769	285
	June	3,481	315	115	815	216	2,879	281
	July	3,578	391	15	862	187	2,935	281
	August	3,519	329	256	841	202	3,060	273
	September*	3,442	365	74	787	213	2,901	271
	AVERAGE	3,416	304	37	767	190	2,800	

<sup>1</sup> Includes natural gasoline and isopentane, unfractionated stream, plant condensate, other liquids; and all finished petroleum products except finished motor gasoline, distillate fuel oil, and residual fuel oil.

<sup>2</sup> Ending Stocks for 1973-1980 are totals as of December 31.

<sup>3</sup> A negative number indicates an increase in stocks and a positive number indicates a decrease. Totals may not equal sum of components due to independent rounding.

\* See Explanatory Note 5.6.

Note: Annual stock changes for 1975 and 1981 were calculated using expanded survey coverage.

Geographic Coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

# Crude Oil and Petroleum Product Imports from OPEC Sources

	Algeria	Libya	Saudi Arabia	United Arab Emirates	Indonesia	Iran	Nigeria	Venezuela	Other OPEC <sup>1</sup>	Total OPEC	Total Arab OPEC <sup>2</sup>
Thousand Barrels per Day											
<b>1973</b>											
<b>AVERAGE</b>	136	164	486	71	213	223	459	1,135	106	2,993	915
<b>1974</b>											
<b>AVERAGE</b>	190	4	461	74	300	469	713	979	88	3,280	752
<b>1975</b>											
<b>AVERAGE</b>	282	232	715	117	390	280	762	702	122	3,601	1,383
<b>1976</b>											
<b>AVERAGE</b>	432	453	1,230	254	539	298	1,025	700	134	5,066	2,424
<b>1977</b>											
<b>AVERAGE</b>	559	723	1,380	335	541	535	1,143	690	287	6,193	3,185
<b>1978</b>											
<b>AVERAGE</b>	649	654	1,144	385	573	555	919	645	226	5,751	2,963
<b>1979</b>											
<b>AVERAGE</b>	636	658	1,356	281	420	304	1,080	690	212	5,637	3,056
<b>1980</b>											
<b>AVERAGE</b>	488	554	1,261	172	348	9	857	481	130	4,300	2,551
<b>1981</b>											
January	341	500	1,284	93	424	0	908	549	27	4,127	2,219
February	381	468	1,122	93	406	0	866	463	92	3,891	2,064
March	352	485	1,027	47	328	0	771	360	54	3,425	1,912
April	263	485	1,034	68	307	0	812	237	39	3,245	1,867
May	393	443	933	17	297	0	664	331	124	3,203	1,796
June	356	380	865	60	367	0	528	248	118	2,922	1,703
July	333	251	1,073	80	340	0	651	486	38	3,233	1,757
August	348	274	1,082	61	377	0	321	523	84	3,070	1,765
September	336	154	1,477	96	371	0	323	359	149	3,264	2,063
October	242	147	1,342	90	427	0	412	389	172	3,220	1,820
November	210	132	1,270	112	353	0	517	535	56	3,184	1,724
December	176	122	1,045	158	400	0	684	411	132	3,129	1,502
<b>AVERAGE</b>	311	319	1,129	81	366	0	620	406	90	3,323	1,848
<b>1982</b>											
January	254	161	877	87	273	0	662	376	128	2,818	1,378
February	139	92	692	79	236	0	579	347	102	2,267	1,044
March	91	37	555	155	200	0	503	399	91	2,032	860
April	85	0	479	122	215	0	427	411	79	1,818	707
May	179	0	601	116	236	0	211	414	54	1,811	897
June	93	0	593	94	215	72	537	361	110	2,075	799
July	122	0	644	123	327	69	910	349	95	2,640	927
August	170	0	489	133	272	27	542	288	134	2,057	807
September	162	0	432	57	191	21	479	514	52	1,907	659
<b>AVERAGE</b>	144	32	596	108	241	21	539	384	94	2,160	898

<sup>1</sup> Includes Ecuador, Gabon, Iraq, Kuwait, and Qatar.

<sup>2</sup> Includes Algeria, Libya, Saudi Arabia, United Arab Emirates, Iraq, Kuwait, and Qatar.

Totals may not equal sum of components due to independent rounding.

Note: Beginning in October 1977, Strategic Petroleum Reserve imports are included.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.



# Crude Oil and Petroleum Product Imports from Non-OPEC Sources

	Bahamas	Canada	Mexico	Netherlands Antilles	Trinidad and Tobago	United Kingdom	Puerto Rico <sup>1</sup>	Virgin Islands <sup>1</sup>	Other <sup>2</sup>	Total
Thousand Barrels per Day										
<b>1973</b>										
AVERAGE	174	1,325	16	585	255	15	99	329	465	3,263
<b>1974</b>										
AVERAGE	164	1,070	8	511	251	8	90	391	340	2,832
<b>1975</b>										
AVERAGE	152	846	71	332	242	14	90	406	300	2,454
<b>1976</b>										
AVERAGE	118	599	87	275	274	31	88	422	353	2,247
<b>1977</b>										
AVERAGE	171	517	179	211	289	126	105	466	550	2,614
<b>1978</b>										
AVERAGE	160	467	318	229	253	180	94	429	484	2,613
<b>1979</b>										
AVERAGE	147	538	439	231	190	202	92	431	548	2,819
<b>1980</b>										
AVERAGE	78	455	533	225	176	176	88	388	491	2,609
<b>1981</b>										
January	39	543	401	198	150	233	89	494	552	2,701
February	84	546	437	227	163	271	46	481	626	2,881
March	74	472	488	227	93	263	45	370	571	2,603
April	68	412	418	198	139	402	40	365	380	2,423
May	122	365	522	213	105	368	58	344	474	2,573
June	51	353	538	196	124	397	67	262	526	2,513
July	77	382	384	212	178	553	50	206	541	2,583
August	69	378	489	255	123	592	68	184	539	2,698
September	111	423	708	163	169	528	72	265	661	3,100
October	63	449	669	161	121	351	60	303	562	2,739
November	63	547	628	168	108	253	76	294	421	2,557
December	70	501	587	148	125	280	73	367	563	2,714
<b>AVERAGE</b>	<b>74</b>	<b>447</b>	<b>522</b>	<b>197</b>	<b>133</b>	<b>375</b>	<b>62</b>	<b>327</b>	<b>534</b>	<b>2,672</b>
<b>1982</b>										
January	28	509	426	179	106	346	62	334	425	2,415
February	50	533	489	221	120	132	38	354	487	2,424
March	43	435	503	189	118	293	62	307	479	2,429
April	67	357	467	180	166	247	36	266	682	2,468
May	76	416	767	152	95	516	47	302	603	2,974
June	32	462	797	141	129	539	58	322	673	3,153
July	30	527	783	158	111	433	38	369	674	3,122
August	68	435	854	145	106	520	24	320	627	3,099
September	92	484	897	195	89	631	51	270	744	3,453
<b>AVERAGE</b>	<b>54</b>	<b>462</b>	<b>666</b>	<b>173</b>	<b>115</b>	<b>409</b>	<b>46</b>	<b>316</b>	<b>599</b>	<b>2,840</b>

<sup>1</sup> U.S. Possessions.

<sup>2</sup> Includes all Non-OPEC countries except those shown above.

Totals may not equal sum of components due to independent rounding.

Note: Beginning in October 1977, Strategic Petroleum Reserve imports are included.

Geographic coverage: The 50 United States and the District of Columbia.

Sources: See "Sources" at the end of this section.

# Sources

- 1973 through 1976: Bureau of Mines, U.S. Department of the Interior, "Petroleum Statement, Annual" and PAD Districts Supply/Demand, Annual," Mineral Industry Surveys.
- 1977 through 1980: Energy Information Administration, U.S. Department of Energy, "Monthly Petroleum Statistics Report," (unleaded gasoline category).
- 1977 through 1980: Energy Information Administration, U.S. Department of Energy, "Petroleum Statement, Annual" and "PAD Districts Supply/Demand, Annual," "Energy Data Reports.
- January 1981 through December 1981: Energy Information Administration, U.S. Department of Energy, "Petroleum Supply Annual."
- January 1982 through September 1982: Detailed statistics in this issue. (See Explanatory Notes 5.1 through 5.6).
- October 1982: Estimates based on EIA weekly data (except domestic crude oil production). See Explanatory Note 2.2).
- January 1982 through October 1982: Domestic crude oil production estimate based on historical statistics from State Conservation Agencies and the U.S. Geological Survey. (See Explanatory Note 2.7).



## Detailed Statistics





Table 1. U.S. Petroleum Balance, September 1982

	Current Month		Year-to-Date	
	Thousand Barrels	Thousand Barrels per Day	Thousand Barrels	Thousand Barrels per Day
Crude Oil (Including Lease Condensate)				
Field Production				
(1) Alaska .....	E 51,222	1,707	E 465,245	1,704
(2) Lower 48 States .....	E 210,767	7,026	E 1,901,601	6,966
(3) Total U.S. ....	E 261,989	8,733	E 2,366,846	8,670
Net Imports				
(4) Imports (Gross Excluding SPR) .....	103,903	3,463	898,573	3,291
(5) SPR Imports .....	4,176	139	44,273	162
(6) Exports .....	5,524	184	64,067	235
(7) Imports (Net Including SPR) .....	102,555	3,418	878,779	3,219
Other Sources				
(8) SPR Withdrawal (+) or Addition (-) .....	-4,291	-143	-47,543	-174
(9) Other Stock Withdrawal (+) or Addition (-) .....	11,854	395	23,541	86
(10) Used Directly and Losses .....	-1,781	-59	-17,619	-65
(11) Unaccounted for 1 .....	-6,533	-218	20,993	77
(12) Total Other Sources .....	-751	-25	-20,628	-76
(13) Crude Input to Refineries .....	363,794	12,126	3,225,009	11,613
(13) = (3) + (7) + (12)				
Natural Gas Plant Liquids (NGPL)				
(14) Field Production .....	45,403	1,513	419,645	1,537
(15) Imports 2 .....	1,062	35	4,896	18
(16) Stock Withdrawal (+) or Addition (-) 2 .....	1,243	41	2,538	9
(17) Total NGPL Supply .....	47,708	1,590	427,078	1,564
Other Liquids				
Unfinished Oils and Gasoline Blending Components, Total				
(18) Stock Withdrawal (+) or Addition (-) .....	-3,183	-106	678	3
(19) Imports .....	6,230	208	43,227	158
(20) Other Hydrocarbons and Alcohol New Supply (Field Production) .....	1,787	60	13,995	51
(21) Refinery Processing Gain 1 .....	15,108	504	140,380	514
(22) Crude Used Directly .....	1,687	56	16,702	61
(23) Total Other Liquids .....	21,637	721	215,182	788
(23) = (18) through (22)				
(24) Total Production of Products 3 .....	433,138	14,438	3,867,269	14,166
(24) = (13) + (17) + (23)				
Net Imports of Refined Products 3				
(25) Imports (Gross) .....	45,405	1,513	373,867	1,369
(26) Exports .....	18,193	606	154,318	565
(27) Imports (Net) .....	27,212	907	219,549	804
(28) Total New Supply of Products .....	460,350	15,345	4,086,818	14,970
(28) = (24) + (27)				
(29) Refined Products Stock Withdrawal (+) or Addition (-) 3 .....	-12,727	-424	89,701	329
(30) Total Petroleum Products Supplied for Domestic Use .....	447,623	14,921	4,176,519	15,299
(30) = (28) + (29)				
(31) Finished Motor Gasoline .....	195,198	6,507	1,788,337	6,551
(32) Naphtha-Type Jet Fuel .....	5,790	193	56,906	208
(33) Kerosene-Type Jet Fuel .....	25,255	842	217,490	797
(34) Kerosene .....	3,234	108	32,659	120
(35) Distillate Fuel Oil .....	75,411	2,514	733,882	2,688
(36) Residual Fuel Oil .....	44,151	1,472	475,349	1,741
(37) Liquefied Petroleum Gases and Ethane .....	45,847	1,528	413,391	1,514
(38) Other .....	63,940	2,131	549,868	2,014
(39) Total Reclassified 1 .....	-11,203	-373	-91,361	-335
(40) Total Product Supplied .....	447,623	14,921	4,176,520	15,299
(40) = (31) through (38)				
Ending Stocks, All Oils				
(41) Crude Oil and Lease Condensate (Excluding SPR) .....	339,923	--	339,923	--
(42) Strategic Petroleum Reserve (SPR) .....	277,884	--	277,884	--
(43) Unfinished Oils .....	117,778	--	117,778	--
(44) Gasoline Blending Components .....	43,123	--	43,123	--
(45) Natural Gasoline and Unfractionated Stream .....	12,981	--	12,981	--
(46) Finished Refined Products 3 .....	622,844	--	622,844	--
(47) Total Stocks .....	1,414,533	--	1,414,533	--

1 A balancing item.

2 Includes isopentane, natural gasoline, unfractionated stream, and plant condensate only.

3 For products included see Explanatory Note 5.7.

E = Estimated.

-- Not Applicable.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes 1, 2, and 5.7.

**Disposition of Crude Oil and Petroleum Products, September 1982**  
thousands of Barrels)

Commodity	Supply					Disposition				Ending Stocks
	Field Production	Refinery Production	Imports	Stock Withdrawal (+) or Addition (-)	Unaccounted For Crude Oil <sup>1</sup>	Crude Used Directly and Losses <sup>2</sup>	Refinery Inputs	Exports	Products Supplied	
<b>Oil (including lease condensate)</b> .....	<b>E 261,989</b>	<b>0</b>	<b>108,079</b>	<b>7,563</b>	<b>-6,532</b>	<b>-1,781</b>	<b>363,794</b>	<b>5,524</b>	<b>0</b>	<b>617,807</b>
<b>Crude Oil</b> .....	<b>45,090</b>	<b>9,259</b>	<b>8,475</b>	<b>2,228</b>	<b>0</b>	<b>0</b>	<b>15,175</b>	<b>2,538</b>	<b>47,339</b>	<b>124,468</b>
Natural Gas Plant Liquids and LRGs .....	6,339	0	931	-162	0	0	5,637	0	1,470	7,049
Fractionated Stream .....	-1,207	0	0	1,226	0	0	0	0	20	4,405
Refined Condensate .....	1,030	0	132	179	0	0	1,338	0	2	1,527
Unrefined Petroleum Gases and Ethane .....	38,928	9,259	7,413	985	0	0	8,200	2,538	45,847	111,487
Propane .....	7,671	95	895	445	0	0	33	(9)	9,074	4,985
Butane .....	13,639	8,032	2,211	19	0	0	115	1,066	22,720	63,838
Pentane .....	6,593	522	2,203	-394	0	0	5,086	1,472	2,366	24,419
Hexane .....	136	633	1,337	203	0	0	84	0	2,224	910
Heptane .....	7,375	0	767	1,337	0	0	0	0	9,478	8,531
Octane .....	3,514	-23	0	-624	0	0	2,882	0	-15	8,804
<b>Other Liquids</b> .....	<b>1,797</b>	<b>0</b>	<b>6,230</b>	<b>-3,183</b>	<b>0</b>	<b>0</b>	<b>16,047</b>	<b>0</b>	<b>-11,203</b>	<b>160,901</b>
Other Hydrocarbons and Alcohol .....	1,797	0	0	1	0	0	1,798	0	0	209
Unfinished Oils .....	0	0	4,491	-1,788	0	0	11,006	0	-8,303	117,778
Motor Gasoline Blending Components .....	0	0	1,738	-1,348	0	0	3,390	0	-3,000	42,492
Aviation Gasoline Blending Components .....	0	0	0	-48	0	0	-147	0	99	422
<b>Finished Petroleum Products</b> .....	<b>313</b>	<b>400,863</b>	<b>37,992</b>	<b>-13,712</b>	<b>0</b>	<b>1,687</b>	<b>0</b>	<b>15,655</b>	<b>411,488</b>	<b>511,357</b>
Finished Motor Gasoline .....	26	195,882	6,460	-6,518	0	0	0	651	195,198	191,333
Finished Leaded Motor Gasoline .....	26	90,467	4,318	-538	0	0	0	651	93,622	93,436
Finished Unleaded Motor Gasoline .....	0	105,320	2,142	-5,987	0	0	0	0	101,475	97,861
Gasohol .....	0	95	0	7	0	0	0	0	102	36
Finished Aviation Gasoline .....	72	651	(9)	229	0	0	0	0	952	2,199
Naphtha-Type Jet Fuel .....	0	5,859	474	-321	0	0	0	222	5,790	6,358
Kerosene-Type Jet Fuel .....	0	23,432	430	1,434	0	0	0	41	25,255	33,373
Kerosene .....	4	3,366	242	-348	0	0	0	30	3,234	9,844
Distillate Fuel Oil .....	2	79,742	1,760	-2,306	0	368	0	4,155	75,411	161,194
Residual Fuel Oil .....	0	30,218	26,116	-9,049	0	1,319	0	4,453	44,151	61,825
Naphtha < 400 Deg. for Petro. Feed. Use .....	0	3,788	1,216	-53	0	0	0	133	4,818	2,231
Other Oils > 400 Deg. for Petro. Feed. Use .....	(9)	7,067	0	246	0	0	0	315	6,998	1,880
Special Naphthas .....	0	1,932	754	-215	0	0	0	280	2,191	3,658
Lubricants .....	0	3,944	304	777	0	0	0	557	4,468	12,653
Waxes .....	0	414	21	-10	0	0	0	10	415	761
Petroleum Coke .....	0	12,166	0	-780	0	0	0	4,715	6,671	6,220
Asphalt .....	0	12,429	211	2,808	0	0	0	51	15,398	14,584
Road Oil .....	0	53	0	2	0	0	0	0	55	65
Still Gas .....	0	17,602	0	0	0	0	0	0	17,602	0
Miscellaneous Products .....	209	2,318	4	391	0	0	0	41	2,881	3,179
<b>Total</b> .....	<b>309,189</b>	<b>410,122</b>	<b>160,776</b>	<b>-7,104</b>	<b>-6,532</b>	<b>-94</b>	<b>395,016</b>	<b>23,718</b>	<b>447,623</b>	<b>1,414,533</b>

<sup>1</sup> Unaccounted for crude oil is a balancing item.

<sup>2</sup> Total equals refinery fuel use and loss.

(9) Less than 500 barrels.

E = Estimated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 3. Year-to-Date Supply and Disposition Statistics of Crude Oil and Petroleum Products, January - September 1982  
(Thousands of Barrels)

Commodity	Supply					Disposition			Ending Stocks	
	Field Production	Refinery Production	Imports	Stock Withdrawal (+) or Addition (-)	Unaccounted For Crude Oil <sup>1</sup>	Crude Used Directly and Losses <sup>2</sup>	Refinery Inputs	Exports		Products Supplied
Crude Oil (including lease condensate)	E 2,366,846	0	942,846	-24,002	21,005	-17,619	3,225,009	64,067	0	617,807
Natural Gas Plant Liquids and LRGs	415,437	74,887	65,175	25,702	0	0	137,043	18,215	425,942	124,468
Natural Gasoline and Isopentane	55,611	0	3,446	2,344	0	0	49,147	0	12,254	7,049
Unfractionated Stream	106	0	0	147	0	0	8	0	245	4,405
Plant Condensate	9,240	0	1,449	47	0	0	10,685	0	52	1,527
Liquefied Petroleum Gases and Ethane	350,479	74,887	60,279	23,164	0	0	77,203	18,215	413,391	111,487
Ethane	74,494	1,210	13,321	-70	0	0	1,277	1	87,677	4,985
Propane	126,534	68,914	15,780	11,720	0	0	1,093	8,749	213,106	63,838
Butane	60,113	3,566	15,118	2,835	0	0	43,662	9,466	28,505	24,419
Butane-Propane Mixtures	1,081	1,266	6,904	843	0	0	1,229	0	8,865	910
Ethane-Propane Mixtures	58,165	0	9,156	7,903	0	0	46	0	75,178	8,531
Isobutane	30,091	-69	0	-66	0	0	29,896	0	60	8,804
Other Liquids	13,995	0	43,227	878	0	0	149,461	0	-91,361	160,901
Other Hydrocarbons and Alcohol	13,995	0	0	-1	0	0	13,994	0	0	209
Unfinished Oils	0	0	33,258	-6,430	0	0	85,616	0	-58,788	117,778
Motor Gasoline Blending Components	0	0	9,969	7,040	0	0	50,375	0	-33,366	42,492
Aviation Gasoline Blending Components	0	0	0	269	0	0	-524	0	793	422
Finished Petroleum Products	4,210	3,577,006	313,588	66,537	0	16,702	0	136,103	3,841,939	511,357
Finished Motor Gasoline	430	1,731,301	50,683	12,136	0	0	0	6,192	1,788,337	191,333
Finished Leaded Motor Gasoline	410	820,248	32,265	14,649	0	0	0	6,192	851,380	93,436
Finished Unleaded Motor Gasoline	20	910,138	18,398	-2,536	0	0	0	0	926,020	97,861
Gasohol	0	915	0	23	0	0	0	0	938	36
Finished Aviation Gasoline	556	6,460	1	533	0	0	0	0	7,551	2,199
Naphtha-Type Jet Fuel	0	54,903	1,592	696	0	0	0	285	56,906	6,358
Kerosene-Type Jet Fuel	2	211,318	6,326	638	0	0	0	794	217,490	33,373
Kerosene	33	29,216	2,524	1,198	0	0	0	313	32,659	9,844
Distillate Fuel Oil	21	697,273	23,212	30,347	0	2,960	0	19,931	733,882	161,194
Residual Fuel Oil	0	298,687	204,706	16,167	0	13,742	0	57,953	475,349	61,825
Naphtha < 400 Deg. for Petro. Feed	0	41,761	15,426	238	0	0	0	1,151	56,274	2,231
Other Oils > 400 Deg. for Petrochem. Feedstock	0	74,107	0	-130	0	0	0	5,173	68,804	1,880
Special Naphthas	738	14,323	5,153	307	0	0	0	1,590	18,931	3,658
Lubricants	0	39,168	2,310	1,651	0	0	0	4,616	38,513	12,653
Waxes	0	3,848	236	-91	0	0	0	195	3,798	761
Petroleum Coke	0	111,034	0	-1,718	0	0	0	37,280	72,036	6,220
Asphalt	0	88,723	1,333	5,003	0	0	0	264	94,795	14,584
Road Oil	0	575	2	-39	0	0	0	0	538	65
Still Gas	0	152,784	0	0	0	0	0	0	152,784	0
Miscellaneous Products	2,429	21,525	103	-400	0	0	0	365	23,293	3,179
Total	2,800,487	3,651,893	1,364,835	69,115	21,005	-917	3,511,513	218,385	4,176,520	1,414,533

<sup>1</sup> Unaccounted for crude oil is a balancing item.

<sup>2</sup> Total equals refinery fuel use and loss.

E Estimated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.



Table 4. Daily Average Supply and Disposition of Crude Oil and Petroleum Products, September 1982  
(Thousand Barrels per Day)

Commodity	Supply					Disposition			
	Field Production	Refinery Production	Imports	Stock Withdrawal (+) Addition (-)	Unaccounted For Crude Oil <sup>1</sup>	Crude Used Directly and Losses <sup>2</sup>	Refinery Inputs	Exports	Products Supplied
<b>Crude Oil (including lease condensate)</b>	<b>E 8,733</b>	<b>0</b>	<b>3,603</b>	<b>252</b>	<b>-218</b>	<b>-59</b>	<b>12,126</b>	<b>184</b>	<b>0</b>
<b>Natural Gas Plant Liquids and LRGs</b>	<b>1,503</b>	<b>309</b>	<b>283</b>	<b>74</b>	<b>0</b>	<b>0</b>	<b>506</b>	<b>85</b>	<b>1,578</b>
Natural Gasoline and Isopentane	211	0	31	-5	0	0	188	0	49
Unfractionated Stream	-40	0	0	41	0	0	0	0	1
Plant Condensate	34	0	4	6	0	0	45	0	(s)
Liquefied Petroleum Gases and Ethane	1,298	309	247	33	0	0	273	85	1,528
Ethane	256	3	30	15	0	0	1	(s)	302
Propane	455	268	74	1	0	0	4	36	757
Butane	220	17	73	-13	0	0	170	49	79
Butane-Propane Mixtures	5	21	45	7	0	0	3	0	74
Ethane-Propane Mixtures	246	0	26	45	0	0	0	0	316
Isobutane	117	-1	0	-21	0	0	96	0	-1
<b>Other Liquids</b>	<b>60</b>	<b>0</b>	<b>208</b>	<b>-106</b>	<b>0</b>	<b>0</b>	<b>535</b>	<b>0</b>	<b>-373</b>
Other Hydrocarbons and Alcohol	60	0	0	(s)	0	0	60	0	0
Unfinished Oils	0	0	150	-60	0	0	367	0	-277
Motor Gasoline Blending Components	0	0	58	-45	0	0	113	0	-100
Aviation Gasoline Blending Components	0	0	0	-2	0	0	-5	0	3
<b>Finished Petroleum Products</b>	<b>10</b>	<b>13,362</b>	<b>1,266</b>	<b>-457</b>	<b>0</b>	<b>56</b>	<b>0</b>	<b>522</b>	<b>13,716</b>
Finished Motor Gasoline	1	6,529	215	-217	0	0	0	22	6,507
Finished Leaded Motor Gasoline	1	3,016	144	-18	0	0	0	22	3,121
Finished Unleaded Motor Gasoline	0	3,511	71	-200	0	0	0	0	3,382
Gasohol	0	3	0	(s)	0	0	0	0	3
Finished Aviation Gasoline	2	22	(s)	8	0	0	0	0	32
Naphtha-Type Jet Fuel	0	195	16	-11	0	0	0	7	193
Kerosene-Type Jet Fuel	0	781	14	48	0	0	0	1	842
Kerosene	(s)	112	8	-12	0	0	0	1	108
Distillate Fuel Oil	(s)	2,658	59	-77	0	12	0	139	2,514
Residual Fuel Oil	0	1,007	871	-302	0	44	0	148	1,472
Naphtha < 400 Deg. for Petro. Feed Use	0	126	41	-2	0	0	0	4	161
Other Oils > 400 Deg. for Petro. Feed Use	0	236	0	8	0	0	0	11	233
Special Naphthas	(s)	64	25	-7	0	0	0	9	73
Lubricants	0	131	10	26	0	0	0	19	149
Waxes	0	14	1	(s)	0	0	0	(s)	14
Petroleum Coke	0	406	0	-26	0	0	0	157	222
Asphalt	0	414	7	94	0	0	0	2	513
Road Oil	0	2	0	(s)	0	0	0	0	2
Still Gas	0	587	0	0	0	0	0	0	587
Miscellaneous Products	7	77	(s)	13	0	0	0	1	96
<b>Total</b>	<b>10,306</b>	<b>13,671</b>	<b>5,359</b>	<b>-237</b>	<b>-218</b>	<b>-3</b>	<b>13,167</b>	<b>791</b>	<b>14,921</b>

<sup>1</sup> Unaccounted for crude oil is a balance item.

<sup>1</sup> Unaccounted for crude oil is a balancing item.

<sup>2</sup> Total equals refinery fuel use and loss.

(s) Less than 500 barrels per day.

E = Estimated.

Note: Total may not equal sum of components due to independent rounding. Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 5. Year-to-Date Daily Average Supply and Disposition of Crude Oil and Petroleum Products, January - September 1982  
(Thousand Barrels per Day)

Commodity	Supply					Disposition			
	Field Production	Refinery Production	Imports	Stock Withdrawal(+) Addition(-)	Unaccounted For Crude Oil <sup>1</sup>	Crude Used Directly and Losses <sup>2</sup>	Refinery Inputs	Exports	Products Supplied
Crude Oil (including lease condensate)	E 8,670	0	3,454	-88	77	-65	11,813	235	0
Natural Gas Plant Liquids and LRGs	1,522	274	239	94	0	0	502	67	1,560
Natural Gasoline and Isopentane	204	0	13	9	0	0	180	0	45
Unfractionated Stream	(s)	0	0	1	0	0	(s)	0	1
Plant Condensate	34	0	5	(s)	0	0	39	0	(s)
Liquefied Petroleum Gases and Ethane	1,284	274	221	85	0	0	283	67	1,514
Ethane	273	4	49	(s)	0	0	5	(s)	321
Propane	463	252	58	43	0	0	4	32	781
Butane	220	13	55	10	0	0	160	35	104
Butane-Propane Mixtures	4	5	25	3	0	0	5	0	32
Ethane-Propane Mixtures	213	0	34	29	0	0	(s)	0	275
Isobutane	110	(s)	0	(s)	0	0	110	0	(s)
Other Liquids	51	0	158	3	0	0	547	0	-335
Other Hydrocarbons and Alcohol	51	0	0	(s)	0	0	51	0	0
Unfinished Oils	0	0	122	-24	0	0	314	0	-215
Motor Gasoline Blending Components	0	0	37	26	0	0	185	0	-122
Aviation Gasoline Blending Components	0	0	0	1	0	0	-2	0	3
Finished Petroleum Products	15	13,103	1,149	244	0	61	0	499	14,073
Finished Motor Gasoline	2	6,342	186	44	0	0	0	23	6,551
Finished Leaded Motor Gasoline	2	3,005	118	54	0	0	0	23	3,155
Finished Unleaded Motor Gasoline	(s)	3,334	67	-9	0	0	0	0	3,392
Gasohol	0	3	0	(s)	0	0	0	0	3
Finished Aviation Gasoline	2	24	(s)	2	0	0	0	0	28
Naphtha-Type Jet Fuel	0	201	6	3	0	0	0	1	208
Kerosene-Type Jet Fuel	(s)	774	23	2	0	0	0	3	797
Kerosene	(s)	107	9	4	0	0	0	1	120
Distillate Fuel Oil	(s)	2,554	85	111	0	11	0	73	2,688
Residual Fuel Oil	0	1,094	750	59	0	50	0	212	1,741
Naphtha < 400 Deg. for Petro. Feed. Use	0	153	57	1	0	0	0	4	206
Other Oils > 400 Deg. for Petro. Feed. Use	0	271	0	(s)	0	0	0	19	252
Special Naphthas	3	52	19	1	0	0	0	6	69
Lubricants	0	143	8	6	0	0	0	17	141
Waxes	0	14	1	(s)	0	0	0	1	14
Petroleum Coke	0	407	0	-6	0	0	0	137	264
Asphalt	0	325	5	18	0	0	0	1	347
Road Oil	0	2	(s)	(s)	0	0	0	0	2
Still Gas	0	560	0	0	0	0	0	0	560
Miscellaneous Products	9	79	(s)	-1	0	0	0	1	85
Total	10,258	13,377	4,999	253	77	-3	12,863	800	15,299

<sup>1</sup> Unaccounted for crude oil is a balancing item.

<sup>2</sup> Total equals refinery fuel use and losses.

(s) Less than 500 barrels per day.

E Estimated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 6. PAD District I, Supply and Disposition of Crude Oil and Petroleum Products, September 1982  
(Thousands of Barrels)

Commodity	Field Production	Refinery Production	Imports	Supply			Crude Used Directly and Losses <sup>2</sup>	Net Receipts	Disposition			Ending Stocks	
				Stock With-drawal (+) or Addition (-)	Unac-counted For Crude Oil <sup>1</sup>	Refinery Inputs			Exports	Products Supplied			
Crude Oil (including lease condensate)													
E 2,708													
893													
1,401													
1,401													
337													
0													
77													
-1													
385													
-1													
2,298													
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1 Unaccounted for crude oil is a balancing item.

2 Total equals refinery fuel use and loss.

3 Includes natural gasoline, isopentane, unfractionated stream, and plant condensate.

(5) Less than 500 barrels.

E Estimated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 7. PAD District II Supply and Disposition of Crude Oil and Petroleum Products, September 1982  
(Thousands of Barrels)

Commodity	Field Production	Refinery Production	Imports	Supply		Crude Used Directly and Losses <sup>2</sup>	Net Receipts	Disposition			
				Stock Withdrawal (+) or Addition (-)	Unaccounted For Crude Oil <sup>1</sup>			Refinery Inputs	Exports	Products Supplied	Ending Stocks
Crude Oil (including lease condensate)	E 31,947	0	18,100	731	36,718	-9	1,295	87,594	1,188	0	74,389
Natural Gas Plant Liquids and LRGs	8,086	2,328	4,035	831	0	0	3,768	4,741	1,348	12,959	33,897
Liquefied Petroleum Gases	6,425	2,285	3,140	186	0	0	2,610	2,928	1,348	10,369	29,853
Ethane	1,692	43	895	304	0	0	0	0	0	2,934	1,309
Other Products <sup>3</sup>	-30	0	0	341	0	0	1,158	1,813	0	-344	2,735
Other Liquids	355	0	284	61	0	0	502	2,266	0	-1,064	30,534
Other Hydrocarbons and Alcohol	355	0	0	-5	0	0	0	350	0	0	104
Unfinished Oils	0	0	159	1,157	0	0	-7	1,951	0	-642	20,561
Motor Gasoline Blending Components	0	0	125	-990	0	0	509	72	0	-428	9,662
Aviation Gasoline Blending Components	0	0	0	-101	0	0	0	-107	0	6	207
Finished Petroleum Products	11	96,058	363	-2,224	0	0	18,876	0	470	112,614	133,806
Finished Motor Gasoline	0	54,148	96	-2,693	0	0	12,136	0	0	63,687	59,855
Finished Leaded Motor Gasoline	0	26,558	94	536	0	0	6,341	0	0	33,529	30,309
Finished Unleaded Motor Gasoline	0	27,573	2	-3,239	0	0	5,795	0	0	30,131	29,528
Gasohol	0	17	0	10	0	0	0	0	0	27	18
Finished Aviation Gasoline	0	68	0	13	0	0	145	0	0	226	519
Naphtha-Type Jet Fuel	0	933	0	-68	0	0	-13	0	0	852	1,270
Kerosene-Type Jet Fuel	0	3,281	0	352	0	0	1,017	0	0	4,650	7,830
Kerosene	0	590	0	-10	0	0	191	0	0	771	2,882
Distillate Fuel Oil	1	20,694	0	24	0	0	4,974	0	0	25,692	45,520
Residual Fuel Oil	0	2,667	121	-497	0	0	-343	0	1	1,948	5,785
Naphtha and Other Oils for Petro. Feed	0	1,069	0	-22	0	0	55	0	68	1,034	269
Special Naphthas	0	427	65	-11	0	0	152	0	2	631	563
Lubricants	0	773	57	101	0	0	135	0	14	1,052	1,951
Waxes	0	36	5	8	0	0	0	0	(5)	49	79
Petroleum Coke	0	3,084	0	-238	0	0	0	0	344	2,502	1,669
Asphalt	0	4,168	18	840	0	0	335	0	42	5,319	5,423
Road Oil	0	42	0	-9	0	0	0	0	0	33	33
Still Gas	0	3,896	0	0	0	0	0	0	0	3,896	0
Miscellaneous Products	10	182	0	-13	0	0	92	0	(5)	270	158
Total	40,399	98,386	22,782	-601	36,718	-9	24,441	94,601	3,007	124,509	272,625

<sup>1</sup> Unaccounted for crude oil is a balancing item.

<sup>2</sup> Total equals refinery fuel use and loss.

<sup>3</sup> Includes natural gasoline, isopentane, unfractionated stream, and plant condensate.

(5) Less than 500 barrels.

E Estimated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 8. PAD District III Supply and Disposition of Crude Oil and Petroleum Products, September 1982  
(Thousands of Barrels)

Commodity	Field Production	Refinery Production	Imports	Supply			Net Receipts	Disposition			Ending Stocks
				Stock Withdrawal (+) or Addition (-)	Unaccounted For Crude Oil	Crude Used Directly and Losses <sup>2</sup>		Refinery Inputs	Exports	Products Supplied	
<b>Crude Oil (including lease condensate)</b>	<b>E 125,727</b>	<b>0</b>	<b>54,818</b>	<b>3,502</b>	<b>-31,875</b>	<b>-62</b>	<b>13,607</b>	<b>165,717</b>	<b>0</b>	<b>0</b>	<b>430,740</b>
<b>Natural Gas Plant Liquids and LRGs</b>	<b>33,008</b>	<b>4,181</b>	<b>2,778</b>	<b>1,558</b>	<b>0</b>	<b>0</b>	<b>-5,700</b>	<b>8,700</b>	<b>999</b>	<b>26,125</b>	<b>82,477</b>
Liquefied Petroleum Gases	23,056	4,143	1,848	510	0	0	-4,921	3,936	999	19,701	68,900
Ethane	5,639	38	0	141	0	0	0	33	0	5,784	3,676
Other Products <sup>3</sup>	4,314	0	930	907	0	0	-779	4,731	0	640	9,901
<b>Other Liquids</b>	<b>737</b>	<b>0</b>	<b>2,998</b>	<b>-3,198</b>	<b>0</b>	<b>0</b>	<b>-1,007</b>	<b>10,479</b>	<b>0</b>	<b>-10,949</b>	<b>68,951</b>
Other Hydrocarbons and Alcohol	737	0	0	-1	0	0	0	736	0	0	86
Unfinished Oils	0	0	2,749	-2,753	0	0	-498	7,237	0	-7,739	50,058
Motor Gasoline Blending Components	0	0	249	-485	0	0	-509	2,558	0	-3,303	18,611
Aviation Gasoline Blending Components	0	0	0	41	0	0	0	-52	0	93	196
<b>Finished Petroleum Products</b>	<b>264</b>	<b>186,033</b>	<b>3,013</b>	<b>1,517</b>	<b>0</b>	<b>7</b>	<b>-95,143</b>	<b>0</b>	<b>9,819</b>	<b>85,872</b>	<b>131,439</b>
Finished Motor Gasoline	0	87,963	(9)	-2,518	0	0	-56,335	0	408	28,702	48,830
Finished Leaded Motor Gasoline	0	39,559	(9)	-1,530	0	0	-24,871	0	408	12,750	23,649
Finished Unleaded Motor Gasoline	0	48,403	0	-988	0	0	-31,464	0	0	15,951	25,181
Gasohol	0	1	0	0	0	0	0	0	0	1	0
Finished Aviation Gasoline	72	345	0	232	0	0	-419	0	0	230	655
Naphtha-Type Jet Fuel	0	2,605	0	-92	0	0	-662	0	222	1,629	2,916
Kerosene-Type Jet Fuel	0	11,651	0	1,173	0	0	-10,293	0	0	2,531	9,554
Kerosene	4	2,293	0	91	0	0	-568	0	30	1,790	2,405
Distillate Fuel Oil	2	36,638	12	1,716	0	7	-21,779	0	3,020	13,575	34,105
Residual Fuel Oil	0	14,944	1,625	-628	0	0	-2,269	0	3,216	10,456	16,218
Naphtha and Other Oils for Petro. Feed.	0	8,990	1,030	191	0	0	-148	0	278	9,784	3,202
Special Naphthas	(9)	1,354	275	-149	0	0	-406	0	272	802	1,882
Lubricants	0	2,159	(9)	532	0	0	-1,095	0	316	1,280	5,984
Waxes	0	219	11	-16	0	0	0	0	4	210	450
Petroleum Coke	0	4,410	0	-70	0	0	0	0	2,027	2,313	838
Asphalt	0	3,063	57	637	0	0	-670	0	1	3,086	2,260
Road Oil	0	0	0	0	0	0	0	0	0	0	2
Still Gas	0	7,891	0	0	0	0	0	0	0	7,891	0
Miscellaneous Products	186	1,508	4	417	0	0	-499	0	26	1,591	2,138
<b>Total</b>	<b>159,735</b>	<b>190,214</b>	<b>63,608</b>	<b>3,379</b>	<b>-31,875</b>	<b>-55</b>	<b>-88,243</b>	<b>184,896</b>	<b>10,819</b>	<b>101,048</b>	<b>713,607</b>

1 Unaccounted for crude oil is a balancing item.

2 Total equals refinery fuel use and loss.

3 Includes natural gasoline, isopentane, unfractionated stream, and plant condensate.

(9) Less than 500 barrels.

E Estimated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 9. PAD District IV Supply and Disposition of Crude Oil and Petroleum Products, September 1982  
(Thousands of Barrels)

Commodity	Supply						Disposition				Ending Stocks
	Field Production	Refinery Production	Imports	Stock Withdrawal (+) or Addition (-)	Unaccounted For Crude Oil <sup>1</sup>	Crude Used Directly and Losses <sup>2</sup>	Net Receipts	Refinery Inputs	Exports	Products Supplied	
Crude Oil (including lease condensate) _____	E 17,082	0	1,448	1,038	-6,311	-7	0	13,250	0	0	11,669
Natural Gas Plant Liquids and LRGs _____	2,059	88	814	-59	0	0	-455	545	0	1,902	1,191
Liquefied Petroleum Gases _____	720	88	758	-45	0	0	-76	381	0	1,064	926
Ethane _____	4	0	0	(s)	0	0	0	0	0	4	(s)
Other Products <sup>3</sup> _____	1,335	0	56	-13	0	0	-379	164	0	834	266
Other Liquids _____	56	0	0	-265	0	0	0	-470	0	261	4,650
Other Hydrocarbons and Alcohol _____	56	0	0	0	0	0	0	56	0	0	0
Unfinished Oils _____	0	0	0	-103	0	0	0	-470	0	367	3,019
Motor Gasoline Blending Components _____	0	0	0	-162	0	0	0	-56	0	-106	1,631
Aviation Gasoline Blending Components _____	0	0	0	0	0	0	0	0	0	0	0
Finished Petroleum Products _____	13	13,482	1	263	0	6	225	0	2	13,988	11,199
Finished Motor Gasoline _____	0	7,201	0	-52	0	0	176	0	0	7,325	4,079
Finished Leaded Motor Gasoline _____	0	4,704	0	8	0	0	-25	0	0	4,687	2,511
Finished Unleaded Motor Gasoline _____	0	2,497	0	-60	0	0	201	0	0	2,638	1,567
Gasohol _____	0	0	0	0	0	0	0	0	0	0	1
Finished Aviation Gasoline _____	0	42	0	-7	0	0	25	0	0	60	51
Naphtha-Type Jet Fuel _____	0	321	0	81	0	0	-108	0	0	294	259
Kerosene-Type Jet Fuel _____	0	506	0	30	0	0	534	0	0	1,070	732
Kerosene _____	0	38	0	-17	0	0	0	0	0	21	54
Distillate Fuel Oil _____	0	3,584	1	-59	0	0	-411	0	(s)	3,114	3,529
Residual Fuel Oil _____	0	299	0	-8	0	6	0	0	0	297	451
Naphtha and Other Oils for Petro. Feed _____	0	0	0	0	0	0	0	0	(s)	(s)	0
Special Naphthas _____	0	2	0	2	0	0	0	0	0	4	6
Lubricants _____	0	20	(s)	10	0	0	9	0	(s)	39	76
Waxes _____	0	2	0	1	0	0	0	0	(s)	3	5
Petroleum Coke _____	0	314	0	-57	0	0	0	0	(s)	257	603
Asphalt _____	0	608	0	339	0	0	0	0	(s)	946	1,349
Road Oil _____	0	1	0	1	0	0	0	0	0	2	3
Still Gas _____	0	524	0	0	0	0	0	0	0	524	0
Miscellaneous Products _____	13	20	0	-1	0	0	0	0	0	32	2
Total _____	19,210	13,570	2,262	978	-6,311	-1	-230	13,325	2	16,151	28,709

<sup>1</sup> Unaccounted for crude oil is a balancing item.

<sup>2</sup> Total equals refinery fuel use and loss.

<sup>3</sup> Includes natural gasoline, isopentane, unfractionated stream, and plant condensate.

(s) Less than 500 barrels.

E Estimated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 10. PAD District V Supply and Disposition of Crude Oil and Petroleum Products, September 1982  
(Thousands of Barrels)

Commodity	Field Production	Refinery Production	Imports	Supply Stock Withdrawal (+) or Addition (-)	Unaccounted For Crude Oil <sup>1</sup>	Crude Used Directly and Losses <sup>2</sup>	Net Receipts	Disposition		
								Refinery Inputs	Exports	Products Supplied
<b>Crude Oil (including lease condensate)</b>	<b>E 84,525</b>	<b>0</b>	<b>5,063</b>	<b>1,197</b>	<b>-5,450</b>	<b>-1,702</b>	<b>-17,200</b>	<b>62,097</b>	<b>4,336</b>	<b>0</b>
<b>Natural Gas Plant Liquids and LRGs</b>	<b>1,044</b>	<b>1,261</b>	<b>394</b>	<b>101</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>921</b>	<b>137</b>	<b>1,742</b>
Liquefied Petroleum Gases	626	1,247	394	92	0	0	0	666	137	1,556
Ethane	0	14	0	0	0	0	0	0	0	1,719
Other Products <sup>3</sup>	418	0	0	10	0	0	0	255	0	0
<b>Other Liquids</b>	<b>488</b>	<b>0</b>	<b>163</b>	<b>-162</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>415</b>	<b>0</b>	<b>57</b>
Other Hydrocarbons and Alcohol	488	0	0	1	0	0	0	489	0	34,842
Unfinished Oils	0	0	163	-744	0	0	0	-935	0	5
Motor Gasoline Blending Components	0	0	0	569	0	0	0	849	0	27,074
Aviation Gasoline Blending Components	0	0	0	12	0	0	0	12	0	7,744
<b>Finished Petroleum Products</b>	<b>0</b>	<b>66,260</b>	<b>2,058</b>	<b>-2,707</b>	<b>0</b>	<b>1,674</b>	<b>3,195</b>	<b>0</b>	<b>4,873</b>	<b>55,051</b>
Finished Motor Gasoline	0	29,022	1,195	-575	0	0	1,765	0	242	19,945
Finished Leaded Motor Gasoline	0	13,301	1,001	-173	0	0	1,055	0	242	14,941
Finished Unleaded Motor Gasoline	0	15,644	194	-402	0	0	710	0	0	16,146
Gasohol	0	77	0	0	0	0	0	0	0	10,471
Finished Aviation Gasoline	0	179	0	0	0	0	0	0	0	77
Naphtha-Type Jet Fuel	0	1,635	0	-11	0	0	21	0	0	189
Kerosene-Type Jet Fuel	0	6,962	0	-195	0	0	253	0	0	1,693
Kerosene	0	9,988	0	-236	0	0	237	0	41	6,922
Distillate Fuel Oil	0	179	0	-39	0	0	0	0	(s)	140
Residual Fuel Oil	0	8,896	137	104	0	361	648	0	1,132	10,106
Naphtha and Other Oils for Petro. Feed	0	380	549	-2,022	0	1,313	-11	0	1,237	10,090
Special Naphthas	0	112	175	-66	0	0	0	0	2	7,488
Lubricants	0	350	(s)	91	0	0	0	0	312	449
Waxes	0	57	2	2	0	0	334	0	1	274
Petroleum Coke	0	3,169	0	-101	0	0	0	0	37	1,296
Asphalt	0	1,627	0	347	0	0	0	0	2	59
Road Oil	0	10	0	10	0	0	0	0	2,175	893
Still Gas	0	3,543	0	0	0	0	0	0	(s)	1,837
Miscellaneous Products	0	151	(s)	-55	0	0	-52	0	0	1,835
<b>Total</b>	<b>86,057</b>	<b>67,521</b>	<b>7,678</b>	<b>-1,571</b>	<b>-5,450</b>	<b>-28</b>	<b>-14,005</b>	<b>63,433</b>	<b>9,346</b>	<b>67,424</b>
										<b>174,605</b>

1 Unaccounted for crude oil is a balancing item.

2 Total equals refinery fuel use and loss.

3 Includes natural gasoline, isopentane, unfractionated stream, and plant condensate.

(s) Less than 500 barrels.

E Estimated.

Note: Total may not equal sum of components due to independent rounding.

Sources and estimation procedures: See Explanatory Notes on Data Collection and Estimation.

Table 11. Production of Crude Oil (including Lease Condensate) by PAD District and State, for the Most Current Month, July 1982

Table 11. Production of Crude Oil (Including Lease Condensate) by PAD District and State, for the Most Current Month, 1 July 1982  
(Thousands of Barrels)

PAD District and State	Production	
	Total	Daily Average
<b>PAD District I</b>		
Florida .....	2,170	70
New York .....	E 71	2
Pennsylvania .....	E 317	10
Virginia .....	0	0
West Virginia .....	E 295	10
<b>Total</b> .....	<b>E 2,853</b>	<b>92</b>
<b>PAD District II</b>		
Illinois .....	2,450	79
Indiana .....	E 401	13
Kansas .....	6,192	200
Kentucky .....	E 556	18
Michigan .....	2,697	87
Missouri .....	E 19	1
Nebraska .....	587	19
North Dakota .....	4,080	132
Ohio .....	E 1,151	37
Oklahoma .....	13,055	421
South Dakota .....	100	3
Tennessee .....	101	3
<b>Total</b> .....	<b>E 31,389</b>	<b>1,013</b>
<b>PAD District III</b>		
Alabama .....	1,855	60
Arkansas .....	E 1,601	52
Louisiana .....		
Gulf Coast .....	36,140	1,166
Rest Of State .....	3,008	97
<b>Total Louisiana</b> .....	<b>39,148</b>	<b>1,263</b>
Mississippi .....	2,824	91
New Mexico .....		
Northwestern .....	691	22
Southeastern .....	5,466	176
<b>Total New Mexico</b> .....	<b>6,157</b>	<b>199</b>
Texas .....		
TRRC District 01 .....	2,228	72
TRRC District 02 .....	3,386	109
TRRC District 03 .....	11,306	365
TRRC District 04 .....	2,377	77
TRRC District 05 .....	656	21
TRRC District 06, excluding East Texas .....	3,496	113
TRRC District 07B .....	2,750	89
TRRC District 07C .....	2,751	89
TRRC District 08 .....	19,400	626
TRRC District 08A .....	20,213	652
TRRC District 09 .....	3,168	102
TRRC District 10 .....	1,703	55
East Texas .....	4,408	142
<b>Total Texas</b> .....	<b>77,842</b>	<b>2,511</b>
<b>Total</b> .....	<b>E 129,427</b>	<b>4,175</b>

--Continued

PAD District and State	Production	
	Total	Daily Average
<b>PAD District IV</b>		
Colorado .....	2,573	83
Montana .....	2,650	85
Utah .....	E 1,949	63
Wyoming .....	E 10,192	329
<b>Total</b> .....	<b>E 17,364</b>	<b>560</b>
<b>PAD District V</b>		
Alaska .....		
South Alaska .....	2,322	75
North Slope .....	50,695	1,635
<b>Total Alaska</b> .....	<b>53,017</b>	<b>1,710</b>
Arizona .....	25	1
California .....		
Central Coastal .....	6,551	211
East Central .....	20,775	670
North .....	17	1
South .....	6,875	222
<b>Total California</b> .....	<b>34,218</b>	<b>1,104</b>
Nevada .....	47	2
<b>Total</b> .....	<b>87,307</b>	<b>2,816</b>
<b>United States Total</b> .....	<b>E 288,340</b>	<b>8,656</b>

1. Includes offshore production.

Sources: See Explanatory Notes on Data Collection and Estimation.  
E Estimated



Table 12. Offshore Production of Crude Oil (including Lease Condensate) By State, for the Most Current Month,<sup>1</sup> July 1982  
(Thousands of Barrels)

State	Offshore Production	
	Total	Daily Average
Alaska <sup>2</sup>		67
California	2,062	
Federal		79
State	2,460	109
California, Total	3,381	188
Louisiana	5,841	
Federal		744
State	23,078	71
Louisiana, Total	2,209	816
Texas	25,287	
Federal		47
State	1,464	4
Texas, Total	139	52
United States Total	1,603	1,122

<sup>1</sup> These production data are included in Table 11.

<sup>2</sup> All offshore production within State boundaries.

Note: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

Table 13. Production of Lease Condensate by State, for the Most Current Month,<sup>1</sup> July 1982  
(Thousands of Barrels)

State	Lease Condensate Production	
	Total	Daily Average
Alabama		38
California	1,168	(9)
Louisiana	11	
Mississippi	5,707	184
New Mexico	170	5
Oklahoma	368	12
Texas	847	27
Total	3,437	111
	11,708	378

<sup>1</sup> These production data are included in Table 11. Small amounts of lease condensate are known to be produced in states other than those listed, however, statistics on this production are not available.

(9) Less than 500 barrels.

Note: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

(Thousands of Barrels)

PRODUCTS BY PAD DISTRICT, September 1982

Commodity	PAD District I			PAD District II					PAD District III				PAD District IV		United States		
	East Coast	Appalachian #1	Appalachian #2	Ind., Ill., Ky.	Minn., Wisc., Dak.	Okl., Kans., Mo.	Total	Texas Inland	Texas Gulf Coast	La. Gulf Coast	No. La., Ark.	New Mexico	Total	Rocky Mt.		Dist. V West Coast	
Natural Gas Plant Liquids	541	351	893	0	1,831	397	5,859	8,086	18,516	2,468	7,906	769	3,448	33,008	2,059	1,044	45,090
Isopentane	0	0	0	0	0	0	198	198	369	132	42	0	0	544	2	0	743
Natural Gasoline	73	36	109	0	57	99	1,145	1,302	2,086	-380	1,337	126	232	3,401	344	440	5,595
Unfractionated Stream	16	0	16	0	984	63	-2,634	-1,587	7,574	-10,922	288	156	2,307	-597	983	-22	-1,207
Plant Condensate	0	0	0	0	34	0	24	58	298	699	30	-62	2	966	6	0	1,030
Liquefied Petroleum Gases and Ethane	452	315	768	0	756	235	7,126	8,117	8,190	12,939	6,110	548	908	28,694	724	626	38,928
Ethane	173	163	337	0	389	0	1,303	1,692	1,344	2,256	1,911	42	86	5,639	4	0	7,671
Propane	166	102	268	0	267	146	2,561	2,974	2,958	3,955	2,022	156	462	9,553	478	367	13,639
Butane	94	32	126	0	47	76	1,004	1,128	1,314	2,466	763	195	163	4,901	230	208	6,593
Butane-Propane Mixtures	0	0	0	0	0	0	0	0	69	19	1	12	0	101	5	30	136
Ethane-Propane Mixtures	0	0	0	0	19	0	1,836	1,855	1,833	2,863	688	0	136	5,520	0	0	7,375
Isobutane	20	17	37	0	34	13	421	469	672	1,380	725	143	60	2,980	7	21	3,514
Finished Motor Gasoline	26	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	26
Finished Leaded Motor Gasoline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finished Unleaded Motor Gasoline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gasohol	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finished Aviation Gasoline	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Naphtha-Type Jet Fuel	0	0	0	0	0	0	0	0	72	0	0	0	0	72	0	0	72
Kerosene-Type Jet Fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Kerosene	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Distillate Fuel Oil	0	0	0	0	0	0	0	0	2	0	0	0	2	4	0	0	4
Special Naphthas	0	0	0	0	0	0	1	1	2	0	0	0	0	2	0	0	2
Miscellaneous Products	0	0	0	0	0	0	0	0	(s)	0	0	0	0	(s)	0	0	(s)
Total Production	567	351	919	0	1,832	397	5,868	8,097	18,766	2,472	7,809	774	3,451	33,271	2,072	1,044	45,403

1 Production represents quantity of natural gas processing plant output less input to fractionating facilities

<sup>1</sup> Production represents quantity of natural gas processing plant output less input to fractionating facilities.

(s) Less than 500 barrels.

Note: Total may not equal sum of components due to independent rounding.

Source: See Explanatory Notes on Data Collection and Estimation.

Table 12. Refinery Input of Crude Oil and Petroleum Products by PAD District, September 1982  
(Thousands of Barrels, Except Where Noted)

Commodity	PAD District I				PAD District II				PAD District III				PAD District IV		United States		
	East Coast	Appalachian #1	Total	Appalachian #2	Ill., Ky.	Ind., Wisc., Daks.	Okla., Kans., Mo.	Total	Texas Inland	Texas Gulf Coast	La. Gulf Coast	No. La., Ark.	New Mexico	Total		PAD Dist. IV Rocky Mt.	PAD Dist. V West Coast
Crude Oil (including lease condensate) .....	32,898	2,238	35,136	1,148	56,827	8,139	21,480	87,594	13,605	86,142	58,854	4,917	2,199	165,717	13,250	62,097	363,794
Natural Gas Plant Liquids																	
Natural Gasoline and Isopentane .....	12	0	12	0	464	237	970	1,671	986	1,945	478	115	97	3,621	78	255	5,637
Unfractionated Stream .....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plant Condensate .....	0	0	0	0	125	0	17	142	36	836	10	228	0	1,110	86	0	1,338
LPG and Ethane .....	237	19	256	6	1,661	331	930	2,928	489	1,501	1,845	102	32	3,969	381	666	8,200
Ethane .....	0	0	0	0	0	0	0	0	0	0	0	0	0	33	0	0	33
Propane .....	1	0	1	0	49	0	0	49	0	0	0	0	0	0	0	0	0
Normal Butane .....	55	0	55	3	600	196	401	1,200	136	953	1,568	32	0	2,687	93	121	4,156
Other Butanes .....	0	0	0	0	221	91	36	348	92	85	0	0	0	177	220	185	930
Butane-Propane Mixtures .....	0	0	0	0	4	0	0	4	0	59	14	0	3	76	4	0	84
Ethane-Propane Mixtures .....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Isobutane .....	181	19	200	3	787	44	493	1,327	261	404	171	70	29	935	60	360	2,882
Other Liquids																	
Other Hydrocarbons .....	106	0	106	0	350	0	0	350	30	511	195	0	0	736	56	489	1,737
Alcohol .....	0	61	61	0	0	0	0	0	0	0	0	0	0	0	0	0	61
Unfinished Oil (net) .....	3,168	55	3,223	-191	1,243	-8	907	1,951	378	2,967	3,976	-154	70	7,237	-470	-935	11,006
Motor Gasoline Blending Components (net) .....	-35	2	-33	-32	244	-34	-106	72	-429	-390	3,304	-21	94	2,558	-56	849	3,390
Aviation Gasoline Blending Components (net) .....	0	0	0	0	-101	0	-6	-107	-25	-23	-4	0	0	-52	0	12	-147
Total Input to Refineries .....	36,386	2,375	38,761	931	60,813	8,665	24,192	94,601	15,070	93,489	68,658	5,187	2,492	184,896	13,325	63,433	395,016
Crude Oil Distillation																	
Gross Input (daily average) .....	1,132	77	1,209	38	1,956	286	726	3,006	476	2,976	2,064	174	80	5,769	448	2,111	12,543
Operable Capacity (daily average) .....	1,633	99	1,733	66	2,362	295	885	3,608	622	4,120	2,756	274	120	7,893	596	3,149	16,979
Operating Ratio (percent) <sup>1</sup> .....	69.3	77.2	69.8	58.3	82.8	96.9	82.1	83.3	76.5	72.2	74.9	63.2	66.7	73.1	75.1	67.0	73.9
Crude Oil Qualities																	
Sulfur Content, Weighted Average (percent) .....	1.12	.23	1.05	.79	.89	1.63	.60	.88	.58	.95	.75	1.59	.28	.86	.78	.99	.90
API Gravity, Weighted Average .....	31.26	41.26	31.95	35.80	34.95	30.98	37.27	35.16	38.38	34.07	34.04	31.07	38.89	34.39	36.71	25.82	32.94
<sup>1</sup> Represents gross input divided by operable capacity.																	

<sup>1</sup> Represents gross input divided by operable capacity.

Note: Total may not equal sum of components due to independent rounding.

Source: See Explanatory Notes on Data Collection and Estimation.

Table 10. Refinery Production of Petroleum Products by PAD District, September 1982  
(Thousands of Barrels)

Commodity	PAD District I			PAD District II						PAD District III				PAD District IV			United States
	East Coast	Appalachian #1	Total	Appalachian #2	Ind., Ill.	Minn., Wisc., Ky.	Okl., Kans., Mo.	Total	Texas Inland	Texas Gulf Coast	La. Gulf Coast	No. La. Ark.	New Mexico	Total	Rocky Mts.	Dist. V West Coast	
Liquefied Petroleum Gases and Ethane	1,389	12	1,401	14	1,747	229	338	2,328	177	2,189	1,721	57	37	4,181	88	1,261	9,259
For Petrochemical Feedstock Use	352	0	352	0	228	4	41	273	11	971	1,389	3	0	1,317	-5	154	2,091
For Other Uses	1,037	12	1,049	14	1,519	225	297	2,055	166	1,218	1,389	54	37	2,864	93	1,107	7,168
Ethane	0	0	0	0	43	0	0	43	0	33	5	0	0	38	0	14	95
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	33	5	0	0	38	0	3	41
For Other Uses	0	0	0	0	43	0	0	43	0	0	0	0	0	0	0	11	54
Propane	1,026	12	1,038	14	1,699	217	483	2,413	197	2,023	1,315	44	33	3,612	171	798	8,032
For Petrochemical Feedstock Use	282	0	282	0	228	0	41	269	0	722	305	0	0	1,027	0	127	1,705
For Other Uses	744	12	756	14	1,471	217	442	2,144	197	1,301	1,010	44	33	2,585	171	671	6,327
Butane	361	0	361	0	5	12	-145	-128	-31	95	-120	11	4	-41	-64	394	522
For Petrochemical Feedstock Use	70	0	70	0	4	4	0	4	0	245	8	3	0	256	0	24	354
For Other Uses	291	0	291	0	5	8	-145	-132	-31	-150	-128	8	4	-297	-64	370	168
Butane-Propane Mixtures	2	0	2	0	0	0	0	0	0	67	521	2	0	590	-14	55	633
For Petrochemical Feedstock Use	0	0	0	0	0	0	0	0	0	0	14	0	0	14	0	0	14
For Other Uses	2	0	2	0	0	0	0	0	0	67	507	2	0	576	-14	55	619
Isobutane for Petro. Feed. Use	0	0	0	0	0	0	0	0	11	-29	0	0	0	-18	-5	0	-23
Finished Motor Gasoline	16,744	804	17,548	438	35,291	4,718	13,701	54,148	7,914	42,936	34,439	1,587	1,087	87,963	7,201	29,022	195,882
Finished Leaded Motor Gasoline	5,940	405	6,345	159	15,660	2,669	8,070	26,558	4,045	15,887	17,902	1,086	639	39,559	4,704	13,301	90,467
Finished Unleaded Motor Gasoline	10,804	399	11,203	279	19,618	2,049	5,627	27,573	3,868	27,049	16,537	501	448	48,403	2,497	15,644	105,320
Gasohol	0	0	0	0	13	0	4	17	1	0	0	0	0	1	0	77	95
Finished Aviation Gasoline	17	0	17	0	39	0	29	68	0	254	91	0	0	345	42	179	651
Naphtha-Type Jet Fuel	321	44	365	0	432	53	448	933	712	1,076	303	167	347	2,605	321	1,635	5,859
Kerosene-Type Jet Fuel	1,032	44	1,076	19	2,597	159	506	3,281	671	4,913	6,038	15	14	11,651	506	6,362	23,432
Kerosene	240	26	266	0	436	66	88	590	85	1,154	1,040	2	12	2,293	38	179	3,366
Distillate Fuel Oil	8,218	620	8,838	257	12,181	1,989	6,267	20,694	3,155	20,240	11,086	1,351	805	35,638	3,584	9,988	79,742
Distillate Fuel Oil Less No. 4	8,218	619	8,837	257	12,144	1,989	6,267	20,657	3,121	19,873	11,059	1,296	801	35,950	3,561	9,904	78,909
No. 4 Fuel Oil	0	1	1	0	37	0	0	37	34	367	27	55	205	688	23	84	833
Residual Fuel Oil	3,273	139	3,412	38	1,899	275	455	2,667	555	7,920	5,916	470	83	14,944	299	8,896	30,218
Naphtha < 400 Deg. For Petro. Feed. Use	408	0	408	0	70	0	102	172	284	2,479	212	1	0	2,976	0	232	3,788
Other Oils > 400 Deg. For Petro. Feed. Use	8	0	8	0	896	0	1	897	260	2,947	2,770	37	0	6,014	0	148	7,067
Lubricants	11	26	37	0	245	0	182	427	83	1,000	110	161	0	1,354	2	112	1,932
Special Naphthas	265	377	642	0	474	0	299	773	17	1,529	398	215	0	2,159	20	350	3,944
Bright Stock	6	166	172	0	11	0	67	78	0	130	18	0	0	148	0	15	413
Neutral	114	199	313	0	379	0	171	550	0	745	289	111	0	1,145	22	244	2,274
Other Grades	145	12	157	0	84	0	61	145	17	654	91	104	0	866	-2	91	1,257
Wax	17	83	100	0	5	0	31	36	9	144	33	33	0	219	2	57	414
Microcrystalline	0	23	23	0	0	0	25	25	9	17	0	33	0	59	0	0	107
Crystalline-Fully Refined	10	17	27	0	4	0	0	4	0	73	33	0	0	106	2	34	173
Crystalline-Other	7	43	50	0	1	0	6	7	0	54	0	0	0	54	0	23	134
Petroleum Coke	1,174	15	1,189	12	2,026	268	778	3,084	269	2,337	1,674	119	11	4,410	314	3,169	12,166
Marketable	465	0	465	0	1,106	147	498	1,751	43	1,000	915	98	0	2,056	160	2,434	6,866
Catalyst	709	15	724	12	920	121	280	1,333	226	1,337	759	21	11	2,354	154	735	5,300
Asphalt	2,906	57	2,963	124	2,585	915	544	4,168	576	443	1,155	815	74	3,063	608	1,627	12,429
Road Oil	0	0	0	0	42	0	0	42	0	0	0	0	0	0	1	10	53
Still Gas	1,639	109	1,748	30	2,562	295	1,009	3,896	402	4,571	2,590	177	51	7,891	524	3,543	17,602
For Petrochemical Feedstock Use	35	0	35	0	2	0	0	2	5	600	90	0	0	695	14	130	876
For Other Uses	1,604	109	1,713	30	2,560	295	1,009	3,894	397	4,071	2,500	177	51	7,196	510	3,413	16,726
Miscellaneous Products	420	37	457	1	107	15	59	182	143	985	363	18	-1	1,508	20	151	2,318
Total Output	38,082	2,349	40,431	933	63,634	8,982	24,837	98,386	15,312	97,217	69,939	5,225	2,521	190,214	19,570	67,521	410,122

Processing Gain(-) or Loss(+)<sup>1</sup> -1,696 26 -1,670 -2 -2,821 -317 -645 -3,785 -242 -3,728 -1,281 -38 -29 -5,318 -245 -4,088 -15,106

1. Represents the arithmetic difference between input and output.  
Notes: Total may not equal sum of components due to independent rounding.  
See Explanatory Notes on negative product yield.  
Source: See Explanatory Notes on Data Collection and Estimation.

Table 17. Percent Refinery Yield of Petroleum Products by PAD District,<sup>1</sup> September 1982

Commodity	PAD District I			PAD District II					PAD District III				PAD District IV		United States		
	East Coast	Appalachian #1	Total	Appalachian #2	Ind., Ill., Ky.	Minn., Wisc., Dak.	Okla., Kans., Mo.	Total	Texas Inland	Texas Gulf Coast	La., Gulf Coast	No. La., Ark.	New Mexico	Total		Rocky Mt.	Dist. V West Coast
Finished Motor Gasoline <sup>2</sup>	45.5	31.5	44.7	48.5	55.9	51.5	53.1	54.7	48.6	43.2	45.5	24.4	38.1	43.9	52.1	43.8	46.8
Finished Aviation Gasoline <sup>3</sup>	(s)	.0	(s)	.0	.2	.0	.2	.2	.2	.3	.2	.0	.0	.2	.3	.3	.2
Liquefied Refinery Gases & Ethane	3.9	.5	3.7	1.5	3.0	2.8	1.5	2.6	1.3	2.5	2.7	1.2	1.6	2.4	.7	2.1	2.5
Naphtha-Type Jet Fuel	.9	1.9	1.0	0	.7	.7	2.0	1.0	5.1	1.2	.5	3.5	15.3	1.5	2.5	2.7	1.6
Kerosene-Type Jet Fuel	2.9	0	2.7	2.0	4.5	2.0	2.3	3.7	4.8	5.5	9.6	.3	.6	6.7	4.0	11.4	6.3
Kerosene	.7	1.1	.7	0	.8	.8	.4	.7	.6	1.3	1.7	(s)	.5	1.3	.3	.3	.9
Distillate Fuel Oil	22.8	27.0	23.0	26.9	21.0	24.5	28.0	23.1	22.6	22.7	17.6	28.4	35.5	21.2	28.0	16.3	21.3
Residual Fuel Oil	9.1	6.1	8.9	4.0	3.3	3.4	2.0	3.0	4.0	8.9	9.4	9.9	3.7	8.6	2.3	14.5	8.1
Naphtha < 400 Deg. F. Petro. Feed. Use	1.1	0	1.1	0	.1	0	.5	.2	2.0	2.8	.3	(s)	0	1.7	0	.4	1.0
Other Oils > 400 Deg. F. Petro. Feed. Use	(s)	.0	(s)	0	1.5	0	(s)	1.0	1.9	3.3	4.4	.8	0	3.5	0	.2	1.9
Special Naphthas	(s)	1.1	.1	0	.4	0	.8	.5	.6	1.1	.2	3.4	0	.8	(s)	.2	.5
Lubricants	.7	16.4	1.7	0	.8	0	1.3	.9	.1	1.7	.6	4.5	0	1.2	.2	.6	1.1
Wax	(s)	3.6	.3	0	(s)	0	.1	(s)	.1	.2	.1	.7	0	.1	(s)	.1	.1
Petroleum Coke	3.3	.7	3.1	1.3	3.5	3.3	3.5	3.4	1.9	2.6	2.7	2.5	.5	2.5	2.5	5.2	3.2
Asphalt	8.1	2.5	7.7	13.0	4.5	11.3	2.4	4.7	4.1	.5	1.8	17.1	3.3	1.8	4.8	2.7	3.3
Road Oil	0	0	0	0	.1	0	.0	(s)	0	0	0	.0	0	.0	(s)	(s)	(s)
Still Gas for Petro. Feed. Use	.1	0	.1	0	(s)	0	0	(s)	(s)	.7	.1	0	0	.4	.1	.2	.2
Still Gas for Other Uses	4.4	4.8	4.5	3.1	4.4	3.6	4.5	4.3	2.8	4.6	4.0	3.7	2.2	4.2	4.0	5.6	4.5
Miscellaneous Products	1.2	1.6	1.2	.1	.2	.2	.3	.2	1.0	1.1	.6	.4	(s)	.9	.2	.2	.6
Processing Gain(+) or Loss(+) <sup>4</sup>	-4.7	1.1	-4.4	-2	-4.9	-3.9	-2.9	-4.2	-1.7	-4.2	-2.0	-.8	-1.3	-3.1	-1.9	-6.7	-4.0

<sup>1</sup> Based on crude oil input and net reruns of unfinished oils.

<sup>1</sup> Based on crude oil input and net returns of unfinished oils.<sup>2</sup> Based on total finished motor gasoline output plus net output of motor gasoline blending components, minus input of natural gas plant liquids, other hydrocarbons and alcohol.<sup>3</sup> Based on finished aviation gasoline output plus net output of aviation gasoline blending components.<sup>4</sup> Represents the arithmetic difference between Input and Production.

(s) Less than 0.05 percent.

Note: Total may not equal sum of components due to independent rounding.

See Explanatory Notes on negative product yields.

Source: See Explanatory Notes on Data Collection and Estimation.

Table 18. Refinery Receipts of Crude Oil by PAD District, September 1982  
(Thousands of Barrels)

Method	PAD District I			PAD District II						PAD District III				PAD District IV		United States
	East Coast	Appalachian #1	Total	Appalachian #2	Ind., Ill., Ky.	Minn., Wisc., Dak.	Okla., Kans., Mo.	Total	Texas Inland	Texas Gulf Coast	La., Ark.	No. La., Ark.	New Mexico	Total	Rocky Mt.	
Pipeline																
Domestic	0	1,654	1,654	838	39,616	4,185	19,881	64,520	11,724	47,260	29,026	3,348	1,961	93,319	10,449	28,041
Foreign	0	0	0	120	15,494	3,666	630	19,910	1,114	10,595	3,368	447	0	15,524	1,476	617
Tanker																
Domestic	3,077	0	3,077	0	0	0	0	0	0	6,609	3,326	0	0	9,935	0	26,976
Foreign	23,236	0	23,236	0	0	0	0	0	0	16,074	15,573	0	0	31,647	0	5,014
Barge																
Domestic	0	154	154	0	288	0	0	288	0	4,824	4,495	42	0	9,361	0	185
Foreign	5,189	0	5,189	0	1,360	0	0	1,360	0	24	760	256	0	1,040	0	0
Tank Cars																
Domestic	60	252	312	0	0	0	0	0	0	0	0	12	0	12	0	0
Foreign	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks																
Domestic	0	360	360	51	275	14	904	1,244	624	201	405	899	307	2,436	820	1,250
Foreign	0	0	0	0	0	0	0	0	174	0	0	0	0	174	0	0
Total																
Domestic	3,137	2,420	5,557	889	40,179	4,199	20,785	66,052	12,348	58,894	37,252	4,301	2,268	115,063	11,269	56,452
Foreign	28,425	0	28,425	120	16,854	3,666	630	21,270	1,288	26,693	19,701	703	0	48,385	1,476	5,631

Note: Total may not equal sum of components due to independent rounding.  
Source: See Explanatory Notes on Data Collection and Estimation.

Table 19. Fuels Consumed at Refineries by PAD District, September 1982  
(Thousands of Barrels, Except Where Noted)

Commodity	PAD District I			PAD District II					PAD District III					PAD District IV		United States	
	East Coast	Appalachian #1	Total	Appalachian #2	Ind., Ill., Ky.	Minn., Wisc., Daks.	Okla., Kans., Mo.	Total	Texas Inland	Texas Gulf Coast	La. Gulf Coast		No. La., Ark.	New Mexico	Total		
Crude Oil (including lease condensate)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(s)	
Liquefied Petroleum Gases <sup>1</sup>	16	8	24	14	102	22	20	158	1	4	257	0	7	269	4	236	691
Unfinished Oils	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Distillate Fuel Oil	30	19	49	0	5	0	0	5	19	0	2	0	(s)	21	0	17	93
Residual Fuel Oil	453	56	509	7	434	36	1	477	5	148	74	15	0	242	62	267	1,557
Marketable Petroleum Coke	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	54	67
Catalyst Petroleum Coke	707	15	722	12	826	72	235	1,144	227	1,278	759	21	11	2,297	152	735	5,050
Still Gas	1,379	108	1,487	30	2,468	243	915	3,656	315	3,637	2,367	172	50	6,542	502	3,220	15,407
Other Fuels <sup>2</sup>	0	0	0	0	67	0	0	67	0	51	0	0	0	51	0	71	189
Natural Gas (million cubic feet)	1,460	211	1,671	43	2,148	81	2,838	5,110	2,537	22,779	17,023	827	123	43,289	828	7,103	58,002
Coal (thousand short tons)	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
Purchased Electricity (million kWh)	215	27	243	7	402	49	139	598	96	400	393	22	28	938	79	539	2,398
Purchased Steam (million pounds)	567	6	573	0	152	0	0	152	0	0	520	0	0	520	0	619	1,864

<sup>1</sup> Includes liquefied refinery gases.

<sup>2</sup> Includes small quantities of other petroleum products (e.g., unfinished oils, kerosene, etc.) consumed at refineries.

(s) Less than 500 barrels except where noted.

Note: Total may not equal sum of components due to independent rounding.

Source: See Explanatory Notes on Data Collection and Estimation.

Table 20. Imports of Crude Oil and Petroleum Products by PAD District, September 1982  
(Thousands of Barrels)

Commodity	Petroleum Administration for Defense Districts					
	I	II	III	IV	V	Total
<b>Crude Oil (including lease condensate) 1 2</b>	<b>28,651</b>	<b>16,100</b>	<b>54,818</b>	<b>1,448</b>	<b>5,063</b>	<b>106,079</b>
<b>Natural Gas Liquids</b>						
Natural Gasoline and Isopentane	454	4,035	2,778	814	394	8,475
Plant Condensate	(s)	0	900	0	0	931
Liquefied Petroleum Gases and Ethane	76	0	0	56	0	132
Ethane	377	4,035	1,848	758	394	7,413
Propane	0	895	0	0	0	895
Butane	270	1,458	0	408	76	2,211
Butane-Propane Mixtures	107	916	511	350	319	2,203
Ethane-Propane Mixtures	0	0	1,337	0	0	1,337
<b>Other Liquids 1</b>						
Unfinished Oils 1	2,784	284	2,998	0	163	6,230
Motor Gasoline Blending Components	1,420	159	2,749	0	163	4,491
	1,364	125	249	0	0	1,738
<b>Finished Petroleum Products</b>	<b>32,557</b>	<b>363</b>	<b>3,013</b>	<b>1</b>	<b>2,058</b>	<b>37,982</b>
Finished Motor Gasoline	5,169	96	(s)	0	1,195	6,460
Finished Leaded Motor Gasoline	3,224	94	(s)	0	1,001	4,318
Finished Unleaded Motor Gasoline	1,945	2	0	0	194	2,142
Finished Aviation Gasoline	(s)	0	0	0	0	(s)
Naphtha-Type Jet Fuel	474	0	0	0	0	474
Kerosene-Type Jet Fuel	430	0	0	0	0	430
Bonded Aircraft Fuel	0	0	0	0	0	0
Other	0	0	0	0	0	0
Kerosene	430	0	0	0	0	430
Distillate Fuel Oil	242	0	0	0	0	242
Bonded ships bunkers	1,610	0	12	1	137	1,760
For military offshore use	0	0	0	0	0	0
No. 2 fuel oil	0	0	0	0	0	0
No. 4 fuel oil	1,575	0	12	1	137	1,725
Residual Fuel Oil	35	0	0	0	0	35
Bonded ships bunkers	23,820	121	1,625	0	549	26,116
For military offshore use	0	0	0	0	0	0
Other	(s)	0	0	0	0	(s)
Naphtha < 400 Deg. for Petro. Feed Use	23,820	121	1,625	0	549	26,116
Other Oils > 400 Deg. for Petro. Feed Use	186	0	1,030	0	0	1,216
Special Naphthas	0	0	0	0	0	0
Lubricants	239	65	275	0	175	754
Wax	246	57	(s)	(s)	(s)	304
Asphalt	4	5	11	0	2	21
Miscellaneous Products	136	18	57	0	0	211
	1	0	4	0	(s)	4
<b>Total Imports</b>	<b>64,445</b>	<b>22,782</b>	<b>63,608</b>	<b>2,262</b>	<b>7,678</b>	<b>160,776</b>

1 Crude oil and unfinished oils are reported by the PAD District in which they are to be processed; all other products are reported by the PAD District of entry.

2 Includes crude oil imported for storage in the Strategic Petroleum Reserve.

(s) Less than 500 barrels.

Note: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

Table 21. Imports of Crude Oil and Petroleum Products by Source and PAD District, September 1982  
(Thousands of Barrels)

Source	Crude Oil 1	LPG and Ethane	Unfin-ished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Kero-sene	Distil. Fuel Oil	Resid. Fuel Oil	Special Naphthas	Other Prod-ucts 2	Total Prod-ucts	Total Petro-leum	Total (Daily Average)
All PAD Districts														
<b>Arab OPEC</b>														
Algeria .....	1,914	284	0	0	0	0	0	0	2,649	3	0	2,936	4,850	162
Kuwait .....	0	0	267	0	0	0	0	0	0	0	0	267	267	9
Saudi Arabia .....	11,469	238	160	0	0	0	0	0	0	165	930	1,493	12,962	432
United Arab Emirates .....	1,104	0	0	496	0	0	0	0	0	96	0	591	1,695	57
Subtotal Arab OPEC .....	14,487	522	427	496	0	0	0	0	2,649	264	930	5,288	19,775	659
<b>Other OPEC</b>														
Gabon .....	1,174	0	0	0	0	0	0	0	117	0	0	117	1,291	43
Indonesia .....	5,606	0	0	0	93	0	0	0	18	0	0	112	5,718	191
Iran .....	615	0	0	0	0	0	0	0	0	0	0	0	615	21
Nigeria .....	14,368	0	0	0	0	0	0	0	0	0	(s)	(s)	14,368	479
Venezuela .....	6,411	215	756	230	0	0	242	0	7,520	0	57	9,019	15,430	514
Subtotal Other OPEC .....	28,174	215	756	230	93	0	242	0	7,655	0	57	9,248	37,423	1,247
<b>Other</b>														
Angola .....	1,685	0	0	0	0	0	0	0	267	0	0	267	1,951	65
Australia .....	0	0	0	0	0	0	0	0	0	0	(s)	(s)	2,757	92
Bahamas .....	0	0	660	0	0	159	0	109	1,829	0	0	2,047	1,428	48
Brazil .....	381	0	0	0	721	0	0	0	326	0	0	1,047	804	27
Brunei .....	700	0	0	0	7	0	0	0	97	0	0	104	804	27
Canada .....	7,255	5,492	159	237	214	0	0	218	466	113	356	7,255	14,510	484
Congo .....	455	0	0	0	0	0	0	0	0	0	0	0	455	15
Egypt .....	0	0	0	0	0	0	0	0	18	0	0	18	18	1
France .....	0	0	0	0	0	0	0	(s)	0	0	(s)	1	1	(s)
Mexico .....	24,520	1,053	1	0	(s)	0	0	16	1,308	1	3	2,381	26,902	897
Netherlands .....	1	(s)	0	0	798	0	0	83	83	0	4	885	886	30
Netherlands Antilles .....	3,481	0	467	0	485	0	0	35	4,870	0	0	5,857	5,857	195
Norway .....	1,557	0	0	0	0	0	0	0	0	0	0	0	3,481	116
Oman .....	0	0	0	0	0	0	0	0	0	0	0	0	1,557	52
People's Republic of China .....	0	0	163	0	847	0	0	20	0	0	0	1,029	1,029	34
Peru .....	1,436	73	0	0	0	0	0	0	1,543	0	0	1,616	3,053	102
Puerto Rico .....	0	0	281	0	759	0	0	0	180	0	302	1,522	1,522	51
Romania .....	0	0	125	127	0	0	0	0	0	0	0	252	252	8
Spain .....	(s)	0	0	0	0	0	0	0	0	0	0	0	(s)	(s)
Trinidad and Tobago .....	2,274	0	0	0	0	0	0	0	389	0	0	389	2,663	89
Tunisia .....	360	0	0	0	0	0	0	0	0	0	0	0	360	12
United Kingdom .....	18,145	59	0	0	0	0	0	0	675	4	42	781	18,925	631
Virgin Islands .....	0	0	498	0	1,832	745	0	1,270	3,049	0	917	8,111	8,111	270
Yugoslavia .....	0	0	0	0	0	0	0	0	0	204	0	204	204	7
Zaire .....	862	0	0	0	0	0	0	0	0	0	0	0	862	29
<b>Other Western Hemisphere</b>														
Hemisphere .....	158	0	200	49	0	0	0	0	502	8	198	957	1,115	37
Other Eastern Hemisphere .....	2,147	(s)	755	600	903	0	0	93	209	159	10	2,729	4,877	163
Subtotal Other .....	65,416	6,676	3,308	1,013	6,366	904	0	1,760	15,811	490	1,832	38,161	103,579	3,453
<b>Total Imports .....</b>	<b>108,079</b>	<b>7,413</b>	<b>4,491</b>	<b>1,738</b>	<b>6,460</b>	<b>904</b>	<b>242</b>	<b>1,760</b>	<b>26,116</b>	<b>754</b>	<b>2,819</b>	<b>52,697</b>	<b>160,776</b>	<b>5,359</b>

See footnotes at end of table.



Table 21. Imports of Crude Oil and Petroleum Products by Source and PAD District, September 1982  
(Thousands of Barrels)  
(continued)

Source	Crude Oil 1	LPG and Ethane	Unfin-ished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Kero-sene	Distil. Fuel Oil	Resid. Fuel Oil	Special Naphthas	Other Prod-ucts 2	Total Prod-ucts	Total Petro-leum	Total (Daily Average)
PAD District I														
<b>Arab OPEC</b>														
Algeria .....	1,185	0	0	0	0	0	0	0	2,649	3	0	2,652	3,837	128
Saudi Arabia .....	5,351	0	160	0	0	0	0	0	0	0	0	160	5,511	184
United Arab Emirates .....	498	0	0	496	0	0	0	0	0	0	0	496	994	33
Subtotal Arab OPEC .....	7,034	0	160	496	0	0	0	0	2,649	3	0	3,308	10,342	345
<b>Other OPEC</b>														
Gabon .....	723	0	0	0	0	0	0	0	117	0	0	117	841	28
Indonesia .....	1,079	0	0	0	0	0	0	0	0	0	0	0	1,079	36
Nigeria .....	3,888	0	0	0	0	0	0	0	0	0	0	0	3,888	130
Venezuela .....	3,504	0	513	230	0	0	242	0	6,525	0	0	7,510	11,014	367
Subtotal Other OPEC .....	9,194	0	513	230	0	0	242	0	6,642	0	0	7,627	16,821	561
<b>Other</b>														
Angola .....	1,006	0	0	0	0	0	0	0	267	0	0	267	1,272	42
Australia .....	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bahamas .....	0	0	0	0	0	159	0	109	1,829	0	0	2,097	2,097	70
Brazil .....	381	0	0	0	721	0	0	0	326	0	0	1,047	1,428	48
Canada .....	0	304	0	37	0	0	0	197	235	32	220	1,025	1,025	34
Egypt .....	0	0	0	0	0	0	0	0	18	0	0	18	18	1
France .....	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mexico .....	2,315	0	0	0	0	0	0	0	963	0	0	963	3,277	109
Netherlands .....	1	0	0	0	798	0	0	0	83	0	0	881	882	29
Netherlands Antilles .....	0	0	467	0	485	0	0	35	4,469	0	0	5,457	5,457	182
Norway .....	1,015	0	0	0	0	0	0	0	0	0	0	0	1,015	34
Oman .....	603	0	0	0	0	0	0	0	0	0	0	0	603	20
Peru .....	390	73	0	0	0	0	0	0	1,543	0	0	1,616	2,006	67
Puerto Rico .....	0	0	281	0	759	0	0	0	180	0	237	1,457	1,457	49
Spain .....	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trinidad and Tobago .....	3	0	0	0	0	0	0	0	389	0	0	389	392	13
Tunisia .....	360	0	0	0	0	0	0	0	0	0	0	0	360	12
United Kingdom .....	4,928	0	0	0	0	0	0	0	675	0	42	717	5,645	188
Virgin Islands .....	0	0	0	0	1,632	745	0	1,270	3,049	0	150	6,846	6,846	228
Yugoslavia .....	0	0	0	0	0	0	0	0	0	204	0	204	204	7
Zaire .....	862	0	0	0	0	0	0	0	0	0	0	0	862	29
Other Western Hemisphere .....	0	0	0	0	0	0	0	0	502	0	0	502	502	17
Other Eastern Hemisphere .....	560	0	0	600	773	0	0	0	0	0	0	1,374	1,934	64
Subtotal Other .....	12,423	377	748	638	5,169	994	0	1,610	14,529	236	650	24,859	37,282	1,243
<b>Total Imports .....</b>	<b>28,651</b>	<b>377</b>	<b>1,420</b>	<b>1,364</b>	<b>5,169</b>	<b>904</b>	<b>242</b>	<b>1,610</b>	<b>23,820</b>	<b>239</b>	<b>650</b>	<b>35,794</b>	<b>64,445</b>	<b>2,148</b>
PAD District II														
<b>Arab OPEC</b>														
Algeria .....	232	0	0	0	0	0	0	0	0	0	0	0	232	8
Saudi Arabia .....	1,443	0	0	0	0	0	0	0	0	0	0	0	1,443	48
Subtotal Arab OPEC .....	1,675	0	0	0	0	0	0	0	0	0	0	0	1,675	56

See footnotes at end of table.

Table 21. Imports of Crude Oil and Petroleum Products by Source and PAD District, September 1982  
(Thousands of Barrels)  
(continued)

Source	Crude Oil 1	LPG and Ethane	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Kerosene	Distill. Fuel Oil	Resid. Fuel Oil	Special Naphthas	Other Products 2	Total Products	Total Petroleum	Total (Daily Average)
PAD District II														
Other OPEC														
Nigeria	2,896	0	0	0	0	0	0	0	0	0	0	0	2,896	97
Subtotal Other OPEC	2,896	0	0	0	0	0	0	0	0	0	0	0	2,896	97
Other														
Canada	5,190	4,035	159	125	96	0	0	0	121	65	80	4,682	9,872	329
Congo	455	0	0	0	0	0	0	0	0	0	0	0	455	15
France	0	0	0	0	0	0	0	0	0	0	(s)	0	0	(s)
Mexico	2,934	0	0	0	0	0	0	0	0	0	0	0	2,934	98
Norway	1,577	0	0	0	0	0	0	0	0	0	0	0	1,577	53
United Kingdom	2,282	0	0	0	0	0	0	0	0	0	0	0	2,282	76
Other Eastern Hemisphere	1,090	0	0	0	0	0	0	0	0	0	0	0	1,090	36
Subtotal Other	13,529	4,035	159	125	96	0	0	0	121	65	80	4,682	18,211	607
Total Imports	18,100	4,035	159	125	96	0	0	0	121	65	80	4,682	22,782	759
PAD District III														
Arab OPEC														
Algeria	497	284	0	0	0	0	0	0	0	0	0	284	781	26
Kuwait	0	0	267	0	0	0	0	0	0	0	0	267	267	9
Saudi Arabia	4,675	238	0	0	0	0	0	0	0	165	930	1,333	6,008	200
United Arab Emirates	606	0	0	0	0	0	0	0	0	96	0	96	701	23
Subtotal Arab OPEC	5,778	522	267	0	0	0	0	0	0	261	930	1,980	7,758	259
Other OPEC														
Gabon	451	0	0	0	0	0	0	0	0	0	0	0	451	15
Indonesia	1,102	0	0	0	0	0	0	0	0	0	0	0	1,102	37
Iran	615	0	0	0	0	0	0	0	0	0	0	0	615	21
Nigeria	7,585	0	0	0	0	0	0	0	0	0	(s)	(s)	7,585	253
Venezuela	2,907	215	243	0	0	0	0	0	995	0	57	1,509	4,417	147
Subtotal Other OPEC	12,659	215	243	0	0	0	0	0	995	0	57	1,509	14,168	472
Other														
Angola	679	0	0	0	0	0	0	0	0	0	0	0	679	23
Bahamas	0	0	660	0	0	0	0	0	0	0	0	0	660	22
Canada	0	0	0	74	0	0	0	0	105	0	0	0	179	6
Mexico	19,271	1,053	1	0	(s)	0	0	12	345	1	1	1,413	20,684	689
Netherlands	0	0	0	0	0	0	0	0	0	0	4	4	4	(s)
Netherlands Antilles	0	0	0	0	0	0	0	0	180	0	0	180	180	6
Norway	889	0	0	0	0	0	0	0	0	0	0	0	889	30
Oman	954	0	0	0	0	0	0	0	0	0	0	0	954	32
Peru	727	0	0	0	0	0	0	0	0	0	0	0	727	24
Puerto Rico	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Romania	0	0	125	127	0	0	0	0	0	0	65	65	65	8
Trinidad and Tobago	2,271	0	0	0	0	0	0	0	0	0	0	252	252	76
United Kingdom	10,935	59	0	0	0	0	0	0	0	4	(s)	53	10,998	367
Virgin Islands	0	0	498	0	0	0	0	0	0	0	767	1,265	1,265	42

See footnotes at end of table.

Table 2.1. Imports of Crude Oil and Petroleum Products by Source and PAD District, September 1982  
(Thousands of Barrels)  
(continued)

Source	Crude Oil 1	LPG and Ethane	Unfinished Oils	Gasoline Blending Components	Finished Motor Gasoline	Jet Fuel	Kerosene	Distill. Fuel Oil	Resid. Fuel Oil	Special Naphthas	Other Products 2	Total Products	Total Petroleum	Total (Daily Average)
PAD District III														
Other														
Other Western Hemisphere	158	0	200	49	0	0	0	0	0	8	198	455	612	20
Other Eastern Hemisphere	496	0	755	0	0	0	0	0	0	(s)	10	765	1,262	42
Subtotal Other	36,381	1,112	2,239	249	(s)	0	0	12	630	14	1,044	5,300	41,681	1,389
Total Imports	54,818	1,848	2,749	249	(s)	0	0	12	1,625	275	2,031	8,790	63,608	2,120
PAD District IV														
Other														
Canada	1,448	758	0	0	0	0	0	1	0	0	56	815	2,262	75
Subtotal Other	1,448	758	0	0	0	0	0	1	0	0	56	815	2,262	75
Total Imports	1,448	758	0	0	0	0	0	1	0	0	56	815	2,262	75
PAD District V														
Other OPEC														
Indonesia	3,426	0	0	0	93	0	0	0	18	0	0	112	3,537	118
Subtotal Other OPEC	3,426	0	0	0	93	0	0	0	18	0	0	112	3,537	118
Other														
Brunel	700	0	0	0	7	0	0	0	97	0	0	104	804	27
Canada	617	394	0	0	118	0	0	21	5	16	(s)	554	1,172	39
France	0	0	0	0	0	0	0	0	0	0	(s)	(s)	(s)	(s)
Mexico	0	0	0	0	0	0	0	4	0	0	2	6	6	(s)
Netherlands	0	(s)	0	0	0	0	0	0	0	0	0	(s)	(s)	(s)
Netherlands Antilles	0	0	0	0	0	0	0	0	220	0	0	220	220	7
People's Republic of China	0	0	0	0	847	0	0	20	0	0	0	1,029	1,029	34
Peru	320	0	163	0	0	0	0	0	0	0	0	0	320	11
Other Eastern Hemisphere	0	(s)	0	0	130	0	0	93	209	159	(s)	590	590	20
Subtotal Other	1,637	394	163	0	1,102	0	0	137	531	175	2	2,504	4,141	138
Total Imports	5,063	394	163	0	1,195	0	0	137	549	175	2	2,616	7,678	256

1 Includes crude oil imported for storage in the Strategic Petroleum Reserve.

2 Includes aviation gasoline, waxes, asphalt, lubricants, natural gasoline, isopentane, plant condensate, naphthas less than 400 degrees F, other oils greater than 400 degrees F and miscellaneous products.

(s) Less than 500 barrels or less than 500 barrels per day.

Note: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

Table 22. Exports of Crude Oil and Petroleum Products by PAD District, September 1982  
(Thousands of Barrels)

Commodity	Petroleum Administration for Defense Districts				
	I	II	III	IV	V
Total					
Crude Oil (including lease condensate) <sup>1</sup>	0	1,188	0	0	4,336
Liquefied Petroleum Gases and Ethane	54	1,348	999	0	137
Ethane	(s)	0	0	0	0
Propane	25	537	449	0	56
Butane	28	812	551	0	81
Butane-Propane Mixtures	0	0	0	0	0
Finished Motor Gasoline	1	0	408	0	242
Naphtha-Type Jet Fuel	0	0	222	0	0
Kerosene-Type Jet Fuel	0	0	0	0	41
Kerosene	(s)	0	30	0	(s)
Distillate Fuel Oil	2	1	3,020	(s)	1,132
Residual Fuel Oil	0	0	3,216	0	1,237
Naphtha < 400 Deg. for Petrochem. Feedstock	98	4	29	(s)	2
Other Oils > 400 Deg. for Petrochem. Feedstock	1	64	249	0	(s)
Special Naphthas	5	2	272	0	1
Lubricants	190	14	316	(s)	37
Wax	4	(s)	4	(s)	2
Petroleum Coke	170	344	2,027	(s)	2,175
Asphalt	7	42	1	1	(s)
Miscellaneous Products	12	(s)	26	0	3
Total Product Exports	544	1,818	10,819	2	5,010
Total Exports	544	3,007	10,819	2	9,346
					23,718

<sup>1</sup> Exports of crude oil are prohibited under normal circumstances. Some crude oil is shipped to Canada in exchange on a barrel-for-barrel basis. Shipments of crude oil to Puerto Rico and the Virgin Islands are not prohibited because these territories are U.S. possessions.

(s) Less than 500 barrels.

Note: Total may not equal sum of components due to independent rounding.

Source: See Explanatory Notes on Data Collection and Estimation.

Table 23. Exports of Crude Oil and Petroleum Products by Destination, September 1982  
(Thousands of Barrels)

Destination	Crude Oil 1	LPG and Ethane	Finished Motor Gasoline	Jet Fuel	Dist. Fuel Oil	Residual Fuel Oil	Special Naphthas	Lubri-cants	Wax	Petro-leum Coke	Asphalt	Other	Total	Total (Daily Average)
Argentina	0	11	0	0	0	0	(s)	7	(s)	54	0	1	73	2
Australia	0	(s)	0	0	0	0	0	12	(s)	48	(s)	3	67	2
Bahamas	0	8	1	0	50	790	0	2	0	0	0	(s)	851	28
Bahrain	0	0	0	0	0	0	(s)	(s)	0	61	(s)	0	61	2
Belgium & Luxembourg	0	1	0	0	0	0	4	3	(s)	396	(s)	3	406	14
Brazil	0	416	0	0	(s)	0	(s)	14	(s)	0	0	(s)	431	14
Cameroon	0	(s)	7	0	0	0	0	(s)	0	30	0	0	37	1
Canada	1,188	1,354	0	0	(s)	529	3	51	2	317	43	102	3,589	120
Chile	0	(s)	0	0	(s)	0	(s)	5	(s)	(s)	0	1	7	(s)
China (Taiwan)	0	1	0	0	0	0	15	9	(s)	(s)	0	1	27	1
Colombia	0	0	0	0	100	0	(s)	14	(s)	(s)	0	1	115	4
Costa Rica	0	(s)	0	0	0	20	(s)	6	(s)	0	0	(s)	27	1
Denmark	0	0	0	0	0	0	0	(s)	0	0	0	0	(s)	(s)
Dominican Republic	0	0	0	0	0	0	(s)	2	0	0	0	(s)	2	(s)
Ecuador	0	22	0	0	120	0	(s)	4	(s)	0	1	34	179	6
Egypt	0	(s)	0	0	0	0	(s)	(s)	0	0	0	0	(s)	(s)
El Salvador	0	0	0	0	0	0	(s)	3	(s)	0	0	0	4	(s)
Finland	0	0	0	0	0	0	(s)	(s)	(s)	0	0	(s)	1	(s)
France	0	0	0	0	917	0	0	8	(s)	376	0	87	1,389	46
French Pacific Isl.	0	0	14	0	(s)	0	0	0	0	0	0	0	14	(s)
Ghana	0	0	0	0	518	0	0	0	0	0	0	0	(s)	(s)
Greece	0	2	0	222	0	0	0	2	0	0	0	(s)	743	25
Guatemala	0	0	0	0	0	0	0	7	(s)	0	0	1	8	(s)
Guinea	0	0	0	0	0	0	(s)	1	0	0	0	0	1	(s)
Honduras	0	0	0	0	0	0	0	1	0	0	0	0	2	(s)
Hong Kong	0	(s)	0	0	0	0	(s)	2	(s)	0	(s)	1	4	(s)
India	0	1	0	0	0	0	0	27	(s)	0	0	7	34	1
Indonesia	0	0	0	0	0	0	0	12	0	0	0	0	12	(s)
Iran	0	0	0	0	0	0	(s)	0	0	0	0	0	0	0
Israel	0	(s)	0	0	134	0	(s)	(s)	0	0	0	10	11	(s)
Italy	0	1	0	0	0	0	(s)	1	(s)	276	0	2	414	14
Ivory Coast	0	0	0	0	0	0	0	0	0	0	0	(s)	(s)	(s)
Jamaica	0	(s)	0	0	0	0	0	0	0	0	0	(s)	34	1
Japan	0	0	0	0	0	0	0	34	0	0	0	(s)	2	80
Jordan	0	7	0	0	714	254	4	21	2	1,388	0	3	2,393	(s)
Korea, Republic of	0	0	0	0	(s)	848	0	2	0	0	0	(s)	2	25
Kuwait	0	(s)	0	0	0	0	(s)	6	(s)	(s)	5	2	747	(s)
Lebanon	0	1	0	0	0	0	0	4	0	0	0	0	5	(s)
Liberia	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Malaysia	0	0	0	0	0	0	0	0	0	0	0	0	0	(s)
Mexico	0	664	630	41	0	0	0	(s)	(s)	0	0	(s)	(s)	(s)
Netherlands	0	(s)	0	0	502	1,264	3	89	(s)	14	(s)	1	1,443	48
Netherlands Antilles	0	(s)	0	0	1	231	6	3	(s)	947	0	124	2,846	95
New Zealand	0	(s)	0	0	0	0	(s)	1	0	0	0	(s)	233	8
Nicaragua	0	0	0	0	0	0	1	3	(s)	(s)	0	0	5	(s)
Nigeria	0	(s)	0	0	0	0	0	(s)	0	0	0	0	(s)	(s)
Norway	0	1	0	0	662	0	0	1	(s)	0	0	1	664	22
Pacific Trust Terr.	0	0	0	0	0	0	0	(s)	0	0	0	0	1	(s)
Panama	0	2	0	0	6	22	(s)	3	(s)	0	0	(s)	34	1
Peru	0	0	0	0	0	0	(s)	39	(s)	0	0	1	40	1
Philippines	0	0	0	0	0	0	(s)	6	(s)	0	0	1	6	(s)

See footnotes at end of table.

Table 23. Exports of Crude Oil and Petroleum Products by Destination, September 1982  
(Thousands of Barrels)

(continued)

Destination	Crude Oil 1	LPG and Ethane	Finished Motor Gasoline	Jet Fuel	Dist. Fuel Oil	Residual Fuel Oil	Special Naphthas	Lubri-cants	Wax	Petro-leum Coke	Asphalt	Other	Total	Total (Daily Average)
Puerto Rico	1,979	10	0	0	9	265	227	9	1	40	(s)	7	2,546	85
Rep. of South Africa	0	0	0	0	0	0	(s)	22	(s)	(s)	(s)	2	26	1
Saudi Arabia	0	1	0	0	0	0	1	19	0	(s)	0	3	24	1
Singapore	0	(s)	0	0	114	430	8	1	(s)	0	(s)	1	554	18
Spain	0	(s)	0	0	0	0	0	(s)	(s)	491	0	17	508	17
Surinam	0	(s)	0	0	0	0	(s)	(s)	(s)	0	0	(s)	(s)	(s)
Sweden	0	0	0	0	0	0	0	9	(s)	0	0	1	10	(s)
Switzerland	0	0	0	0	0	0	(s)	(s)	(s)	0	0	1	1	(s)
Thailand	0	0	0	0	0	0	(s)	1	(s)	0	0	1	2	(s)
Trinidad and Tobago	0	(s)	0	0	0	0	0	(s)	0	1	0	(s)	1	(s)
Turkey	0	(s)	0	0	0	0	0	1	(s)	0	0	(s)	1	(s)
United Arab Emirates	0	1	0	0	0	0	(s)	2	(s)	58	0	(s)	61	2
United Kingdom	0	4	0	0	152	0	(s)	43	(s)	0	(s)	63	262	9
U.S.S.R.	0	0	0	0	0	0	0	19	0	0	0	12	31	1
Uruguay	0	0	0	0	0	0	0	1	0	0	0	(s)	1	(s)
Venezuela	0	11	0	0	0	0	1	3	(s)	1	(s)	4	20	1
Virgin Islands	1,798	1	0	0	0	0	0	(s)	0	0	0	0	1,799	60
West Germany	0	1	0	0	1	0	0	15	(s)	216	0	13	246	8
Yugoslavia	0	0	0	0	0	0	0	0	(s)	0	0	0	(s)	(s)
Other	559	13	0	0	70	0	2	8	(s)	0	(s)	3	656	22
Total	5,524	2,538	651	263	4,155	4,453	280	557	10	4,715	51	520	23,718	791

1. Exports of crude oil are prohibited under normal circumstances. Some crude oil is shipped to Canada in exchange, on a barrel-for-barrel basis. Shipments of crude oil to Puerto Rico and the Virgin Islands are not prohibited because these territories are U.S. possessions.

(s) Less than 500 barrels or less than 500 barrels per day.

Note: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

4. Stocks of Crude Oil and Petroleum Products by PAD District, September 30, 1982  
(Thousands of Barrels)

Commodity	PAD District I				PAD District II				PAD District III				PAD District IV		United States		
	East Coast	Appalachian #1	Total	Appalachian #2	Ind. Ill. Ky.	Minn. Wisc. Dak.	Okla. Kans. Mo.	Total	Texas Inland	Texas Gulf Coast	La. Gulf Coast	No. La. Ark.	New Mexico	Total		Rocky Mts.	Dist. V West Coast
Crude Oil (incl. lease condensate) <sup>1</sup>																	
Refinery	—	—	14,933	—	—	—	—	14,937	—	—	—	—	—	44,839	1,683	25,370	101,582
Tank Farms and Pipelines	—	—	3,072	—	—	—	—	57,891	—	—	—	—	—	91,122	8,607	32,007	182,704
Leases	—	—	63	—	—	—	—	1,541	—	—	—	—	—	17,095	1,379	1,813	21,891
Strategic Petroleum Reserve <sup>2</sup>	—	—	—	—	—	—	—	0	—	—	—	—	—	277,864	0	0	277,864
Alaskan In-Transit	—	—	—	—	—	—	—	0	—	—	—	—	—	0	0	23,746	23,746
Total	—	—	18,073	—	—	—	—	74,369	—	—	—	—	—	430,740	11,969	82,936	617,907
Petroleum Products																	
Refinery	43,575	3,411	46,986	1,107	45,538	5,729	21,796	74,170	9,946	80,297	47,602	4,715	1,255	143,815	11,847	64,882	341,700
Bulk Terminal	123,826	6,573	130,499	3,941	42,033	9,042	12,504	67,520	4,969	37,014	7,215	4,104	466	53,768	2,411	21,450	275,648
Pipeline	25,683	2,598	28,191	1,672	12,551	3,515	17,211	34,949	8,214	9,259	7,567	13,686	1,056	38,782	2,541	4,467	109,930
Natural Gas Processing Plant	471	767	1,238	0	2,547	282	18,769	21,597	5,396	24,526	10,761	3,843	975	45,502	241	870	69,448
Total	193,655	13,259	206,914	6,720	102,669	18,568	70,280	198,236	28,525	151,096	73,145	26,348	3,752	262,867	17,040	91,669	786,726
Natural Gasoline and Isooctane																	
Refinery	2	0	2	0	40	8	109	157	50	332	151	0	18	551	4	27	741
Pipeline	0	0	0	0	146	2	229	377	213	107	0	44	84	448	186	5	1,016
Natural Gas Processing Plant	2	19	21	0	18	18	634	670	403	3,528	558	15	31	4,535	42	23	5,282
Total	4	19	23	0	204	28	972	1,204	666	3,967	709	59	133	5,534	232	55	7,049
Unfractionated Stream																	
Pipeline	0	0	0	0	78	0	23	101	0	28	28	0	0	56	0	0	157
Natural Gas Processing Plant	0	0	0	0	102	3	1,311	1,417	180	2,145	151	1	322	2,800	30	2	4,248
Total	0	0	0	0	180	3	1,334	1,518	180	2,173	179	1	322	2,856	30	2	4,405
Plant Condensate																	
Refinery	0	0	0	0	5	0	0	5	9	115	0	91	0	215	0	0	220
Pipeline	0	0	0	0	0	0	0	0	805	327	49	4	17	1,202	0	0	1,202
Natural Gas Processing Plant	0	0	0	0	3	0	6	8	36	35	12	9	1	93	3	0	105
Total	0	0	0	0	8	0	6	13	850	477	61	104	18	1,510	3	0	1,527
Ethane																	
Refinery	0	0	0	0	9	0	0	9	0	366	0	0	0	366	0	0	375
Bulk Terminal	0	0	0	0	50	0	23	73	0	1,100	0	0	0	1,100	0	0	1,173
Pipeline	0	0	0	0	58	765	174	997	174	71	101	0	3	349	0	0	1,346
Natural Gas Processing Plant	0	0	0	0	25	0	205	230	74	1,633	153	1	0	1,861	(9)	0	2,091
Total	0	0	0	0	142	765	402	1,309	248	3,170	254	1	3	3,676	(9)	0	4,985
Propane for Petrochemical Feedstock Use																	
Refinery	55	0	55	0	112	0	0	112	0	9	459	0	0	468	0	0	635
Total	55	0	55	0	112	0	0	112	0	9	459	0	0	468	0	0	635
Propane for Other Uses																	
Refinery	494	2	496	1	1,187	18	239	1,445	141	534	857	3	2	1,537	173	171	3,822
Bulk Terminal	602	0	602	0	1,054	82	486	1,622	210	14,182	81	14	0	14,487	33	0	16,744
Pipeline	760	1,254	2,014	41	864	366	1,913	3,184	597	415	241	632	152	2,037	116	0	7,351
Natural Gas Processing Plant	439	741	1,181	0	2,243	246	12,967	15,457	2,756	6,065	5,551	3,552	245	18,169	131	349	35,286
Total	2,295	1,997	4,293	42	5,348	712	15,605	21,708	3,704	21,196	6,730	4,201	399	36,230	453	520	63,203

See footnotes at end of table.

Table 24. Stocks of Crude Oil and Petroleum Products by PAD District, September 30, 1982  
(Thousands of Barrels) (continued)

Commodity	PAD District I			PAD District II					PAD District III				PAD District IV		United States		
	East Coast	Appalachian #1	Total	Appalachian #2	Ind., Ill., Ky.	Minn., Wisc., Dak.	Okla., Kans., Mo.	Total	Texas		La. Gulf Coast	No. La., Ark.	New Mexico	Total		Rocky Mts.	Dist. V West Coast
									Inland	Gulf Coast							
Butane for Petro. Feed. Use																	
Refinery .....	0	0	0	0	0	18	0	0	18	0	28	0	2	0	30	0	1
Total .....	0	0	0	0	0	18	0	0	18	0	28	0	2	0	30	0	1
Butane for Other Uses																	
Refinery .....	188	0	188	283	339	36	357	1,015	174	754	1,342	1	1	2,272	133	591	4,199
Bulk Terminal .....	337	0	337	0	511	0	128	639	130	5,063	0	0	0	5,193	0	0	6,169
Pipeline .....	20	172	192	3	807	30	212	1,052	981	20	5	67	87	1,160	128	0	2,532
Natural Gas Processing Plant .....	22	3	24	0	68	12	2,008	2,088	1,136	4,496	2,993	165	60	8,849	32	476	11,470
Total .....	567	175	741	286	1,725	78	2,705	4,794	2,421	10,333	4,340	233	148	17,474	293	1,067	24,370
Butane-Propane Mixtures for Petro. Feed. Use																	
Refinery .....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total .....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Butane-Propane Mixtures for Other Uses																	
Refinery .....	0	0	0	0	2	0	0	2	0	13	9	0	7	29	1	82	114
Bulk Terminal .....	0	0	0	0	42	0	0	42	0	1	0	0	0	1	0	0	43
Pipeline .....	0	0	0	0	0	0	19	19	608	26	10	0	1	645	0	0	664
Natural Gas Processing Plant .....	0	0	0	0	0	0	52	52	27	4	2	1	0	34	(s)	2	89
Total .....	0	0	0	0	44	0	71	115	635	44	21	1	8	709	1	84	910
Ethane-Propane Mixtures																	
Bulk Terminal .....	0	0	0	0	0	0	1	1	216	1,647	0	0	0	1,863	0	0	1,864
Pipeline .....	0	0	0	0	66	0	545	611	737	126	2	0	92	957	105	0	1,673
Natural Gas Processing Plant .....	0	0	0	0	0	0	903	903	334	3,537	0	0	221	4,091	0	0	4,994
Total .....	0	0	0	0	66	0	1,449	1,515	1,287	5,310	2	0	313	6,911	105	0	8,531
Isobutane																	
Refinery .....	2	7	9	63	96	19	146	324	71	165	643	14	7	900	30	29	1,292
Bulk Terminal .....	0	0	0	0	80	0	10	90	140	1,923	0	0	0	2,063	0	0	2,153
Pipeline .....	0	0	0	18	286	0	105	409	239	10	0	100	57	406	43	0	858
Natural Gas Processing Plant .....	1	4	6	0	85	2	680	768	178	2,053	1,340	44	95	3,709	1	18	4,501
Total .....	3	11	15	81	547	21	941	1,591	628	4,151	1,983	158	159	7,078	74	47	8,804
Other Hydrocarbons and Alcohol																	
Refinery .....	0	14	14	0	104	0	0	104	1	70	15	0	0	86	0	5	209
Total .....	0	14	14	0	104	0	0	104	1	70	15	0	0	86	0	5	209
Unfinished Oils																	
Refinery .....	3,725	432	4,157	82	3,491	117	1,309	4,999	1,169	7,471	5,551	185	87	14,463	473	5,886	29,978
Naphthas and Lighter .....	2,659	17	2,676	0	3,508	6	699	4,213	497	8,285	1,176	38	6	10,002	439	4,370	21,700
Kerosene and Lighter Gas Oils .....	7,395	405	7,790	167	3,183	244	2,333	5,927	1,029	11,842	6,027	649	168	19,715	1,567	11,668	46,667
Heavy Gas Oils .....	2,179	264	2,443	3	3,645	67	1,707	5,422	255	2,694	2,891	38	0	5,878	540	5,150	19,433
Residuum .....	15,948	1,118	17,066	252	13,827	434	6,048	20,561	2,950	30,292	15,645	910	261	50,058	3,019	27,074	117,778
Total .....																	

See footnotes at end of table.



Stocks of Crude Oil and Petroleum Products by PAD District, September 30, 1982  
(Thousands of Barrels) (continued)

Commodity	PAD District I			PAD District II					PAD District III					PAD		United States		
	East Coast	Appalachian #1	Total	Appalachian #2	Ind., Ill., Ky.	Minn., Wisc., Dak.	Okl., Kans., Mo.	Total	Texas Inland	Texas Gulf Coast	La. Gulf Coast		No. La. Ark.	New Mexico	Total		Dist. IV Rocky Mt.	Dist. V West Coast
Motor Gasoline Blending Components																		
Refinery	4,446	96	4,542	38	6,650	506	2,087	9,281	1,545	9,960	6,710	99	128	18,442	1,631	7,267	41,163	
Bulk Terminal	301	1	302	6	116	2	142	266	94	37	0	0	0	131	0	477	1,176	
Pipeline	0	0	0	0	20	2	93	115	38	0	0	0	0	38	0	0	153	
Total	4,747	97	4,844	44	6,786	510	2,322	9,662	1,677	9,997	6,710	99	128	18,611	1,631	7,744	42,492	
Aviation Gasoline Blending Components																		
Refinery	0	0	0	0	198	0	9	207	10	65	121	0	0	196	0	19	422	
Total	0	0	0	0	198	0	9	207	10	65	121	0	0	196	0	19	422	
Total Finished Motor Gasoline																		
Refinery	5,165	284	5,449	117	7,025	1,382	4,275	12,799	1,916	9,398	6,113	603	165	18,195	1,767	7,552	45,762	
Bulk Terminal	35,463	3,002	38,465	1,976	19,386	4,403	5,260	31,025	2,217	4,459	1,536	2,545	264	11,021	1,228	10,010	91,749	
Pipeline	14,005	689	14,704	837	6,029	1,253	7,912	16,031	2,542	4,960	4,216	7,778	118	19,614	1,084	2,383	53,816	
Natural Gas Processing Plant	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Total Finished Motor Gasoline	54,639	3,985	58,624	2,930	32,440	7,038	17,447	59,855	6,675	18,817	11,865	10,926	547	48,830	4,079	19,945	191,333	
Finished Leaded Motor Gasoline																		
Refinery	2,212	137	2,349	72	3,078	787	2,452	6,389	989	4,263	3,454	436	97	9,239	1,142	3,277	22,396	
Bulk Terminal	16,751	1,439	18,190	982	9,644	2,427	3,028	16,081	995	2,833	748	1,306	154	6,036	684	5,019	46,010	
Pipeline	6,686	269	6,955	330	2,620	725	4,164	7,839	1,155	2,819	1,536	2,807	57	8,374	685	1,171	25,024	
Natural Gas Processing Plant	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
Total	25,655	1,845	27,500	1,384	15,342	3,939	9,644	30,309	3,139	9,915	5,738	4,549	308	23,649	2,511	9,467	93,436	
Finished Unleaded Motor Gasoline																		
Refinery	2,953	147	3,100	45	3,947	595	1,823	6,410	927	5,135	2,659	167	68	8,956	624	4,268	23,358	
Bulk Terminal	18,702	1,563	20,265	994	9,727	1,976	2,230	14,927	1,222	1,626	788	1,239	110	4,985	544	4,391	45,712	
Pipeline	7,319	430	7,749	507	3,409	527	3,748	8,191	1,387	2,141	2,680	4,971	61	11,240	399	1,212	28,791	
Total	28,974	2,140	31,114	1,546	17,083	3,098	7,801	29,528	3,536	8,902	6,127	6,377	239	25,181	1,567	10,471	97,861	
Gasohol																		
Refinery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	8	
Bulk Terminal	10	0	10	0	15	0	2	17	0	0	0	0	0	0	0	0	27	
Pipeline	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	
Total	10	0	10	0	15	1	2	18	0	0	0	0	0	0	1	7	36	
Finished Aviation Gasoline																		
Refinery	26	0	26	0	68	0	33	101	25	325	103	0	0	453	36	211	827	
Bulk Terminal	319	33	352	0	185	44	78	307	42	6	5	22	40	115	15	368	1,157	
Pipeline	17	0	17	0	37	0	74	111	9	1	0	0	0	10	0	0	138	
Natural Gas Processing Plant	0	0	0	0	0	0	0	0	77	0	0	0	0	77	0	0	77	
Total	362	33	395	0	290	44	185	519	153	332	108	22	40	655	51	579	2,199	
Naphtha-Type Jet Fuel																		
Refinery	136	41	177	0	406	62	326	794	325	841	449	127	213	1,955	165	985	4,076	
Bulk Terminal	34	9	43	6	61	8	123	198	168	119	0	47	0	334	19	80	674	
Pipeline	283	0	283	6	0	36	236	278	97	0	90	119	321	627	75	345	1,608	
Total	453	50	503	12	467	106	685	1,270	590	960	539	293	534	2,916	259	1,410	6,358	

See footnotes at end of table.

Table 24. Stocks of Crude Oil and Petroleum Products by PAD District, September 30, 1962  
(Thousands of Barrels) (continued)

Commodity	PAD District I			PAD District II						PAD District III				PAD District IV			United States
	East Coast	Appala- chian	Total	Appala- chian	Ind., Ky.	Wisc., Daks.	Okla., Kans., Mo.	Total	Texas Inland	Texas Gulf Coast	La. Gulf Coast	No. La., Ark.	New Mexico	Total	Rocky Mts.	PAD Dist. V West Coast	
		#1	#2														
Kerosene-Type Jet Fuel																	
Refinery	1,102	0	1,102	29	1,285	77	225	1,616	303	1,967	2,327	11	41	4,649	372	3,412	11,151
Bulk Terminal	4,974	185	5,159	53	2,838	261	612	3,764	198	1,317	74	46	31	1,666	219	2,064	12,872
Pipeline	2,685	91	2,776	95	793	147	1,415	2,450	583	822	693	1,101	40	3,239	141	744	9,350
Total	8,761	276	9,037	177	4,916	485	2,252	7,830	1,084	4,106	3,094	1,158	112	9,554	732	6,220	33,373
Kerosene																	
Refinery	115	64	179	0	731	26	295	1,052	42	858	487	7	29	1,403	17	155	2,806
Bulk Terminal	3,411	227	3,638	212	1,152	108	34	1,506	6	323	61	13	0	403	37	43	5,627
Pipeline	461	16	477	69	244	0	11	324	5	124	187	280	0	596	0	11	1,408
Natural Gas Processing Plant	0	0	0	0	0	0	0	0	2	0	0	(9)	0	3	0	0	3
Total	3,987	307	4,294	281	2,127	134	340	2,882	55	1,305	715	300	29	2,405	54	209	9,844
Total Distillate Fuel Oils																	
Refinery	7,611	406	8,017	57	7,676	1,889	4,692	14,314	1,235	9,968	5,370	1,108	209	17,890	2,007	4,451	46,679
Bulk Terminal	49,926	2,279	52,205	1,294	13,463	3,610	3,973	22,340	1,434	3,932	1,257	1,134	116	7,873	859	4,673	87,950
Pipeline	7,452	276	7,728	603	3,123	914	4,225	8,665	531	2,219	1,945	3,561	84	8,340	663	966	26,562
Natural Gas Processing Plant	0	0	0	0	0	0	1	1	2	0	0	0	0	2	0	0	3
Total Distillate Fuel Oil	64,989	2,961	67,950	1,954	24,262	6,413	12,891	45,520	3,202	16,119	8,572	5,803	409	34,105	3,529	10,090	161,194
Dist. Fuel Oils Less No. 4 Fuel Oil																	
Refinery	7,611	398	8,009	57	7,619	1,889	4,692	14,257	1,187	9,524	5,193	1,064	158	17,126	2,001	4,415	45,808
Bulk Terminal	48,606	2,277	50,883	1,283	13,265	3,585	3,973	22,106	1,434	3,932	1,257	1,133	116	7,872	859	4,643	86,363
Pipeline	7,452	276	7,728	603	3,123	914	4,225	8,665	531	2,219	1,945	3,561	84	8,340	663	966	26,562
Natural Gas Processing Plant	0	0	0	0	0	0	1	1	2	0	0	0	0	2	0	0	3
Total	63,669	2,951	66,620	1,943	24,007	6,388	12,891	45,229	3,154	15,675	8,395	5,758	358	33,340	3,523	10,024	158,796
No. 4 Fuel Oil																	
Refinery	0	8	8	0	57	0	0	57	48	444	177	44	51	764	6	36	871
Bulk Terminal	1,320	2	1,322	11	198	25	0	234	0	0	0	1	0	1	0	30	1,587
Total	1,320	10	1,330	11	255	25	0	291	48	444	177	45	51	765	6	66	2,458
Residual Fuel Oils																	
Refinery	3,548	88	3,636	47	2,295	344	266	2,952	329	5,296	3,274	442	82	9,423	451	7,801	24,263
Bulk Terminal	25,053	296	25,349	200	1,393	113	1,127	2,833	103	2,762	3,827	102	0	6,794	0	2,572	37,548
Pipeline	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	13	14
Total	28,601	384	28,985	247	3,688	457	1,393	5,785	432	8,059	7,101	544	82	16,218	451	10,386	61,825
Naphtha < 400 Deg. Petro. Feedstock																	
Refinery	186	0	186	0	43	0	68	111	70	938	567	9	0	1,584	0	350	2,231
Total	186	0	186	0	43	0	68	111	70	938	567	9	0	1,584	0	350	2,231
Other Oils > 400 Deg. Petro. Feedstock																	
Refinery	5	0	5	0	157	0	1	158	142	1,194	257	25	0	1,618	0	99	1,890
Total	5	0	5	0	157	0	1	158	142	1,194	257	25	0	1,618	0	99	1,890
Special Naphthas																	
Refinery	19	31	50	0	180	0	188	368	39	1,393	81	96	0	1,609	6	233	2,266
Bulk Terminal	866	17	883	44	139	12	0	195	0	114	0	27	0	1,260	0	41	1,260
Natural Gas Processing Plant	0	0	0	0	0	0	0	0	132	0	0	0	0	132	0	0	132
Total	885	48	933	44	319	12	188	563	171	1,507	81	123	0	1,882	6	274	3,658

See footnotes at end of table.

Table 24. Stocks of Crude Oil and Petroleum Products by PAD District, September 30, 1982  
(Thousands of Barrels) (continued)

Commodity	PAD District I			PAD District II					PAD District III				PAD		United States		
	East Coast	Appalachian #1	Total	Appalachian #2	Ind., Ill., Ky.	Minn., Wisc., Dak.	Okla., Kans., Mo.	Total	Texas		La. Gulf Coast	No. La., Ark.	New Mexico	Total	Dist. IV Rocky Mt.	Dist. V	
									Inland	Gulf Coast						West	Coast
<b>Lubricants</b>																	
Refinery	49	413	462	0	48	0	39	87	0	242	72	0	0	314	6	43	912
Bright Stock	760	370	1,130	0	549	0	458	1,007	0	1,746	937	71	0	2,754	62	571	5,524
Neutral	590	156	746	0	149	0	129	278	28	2,129	245	151	0	2,553	7	109	3,683
Other	802	206	1,008	16	469	16	78	579	11	23	243	71	15	363	1	573	2,524
Bulk Terminals	2,201	1,145	3,346	16	1,215	16	704	1,951	39	4,140	1,497	293	15	5,984	76	1,296	12,653
Total																	
<b>Wax, Microcrystalline</b>																	
Refinery	1	48	49	0	0	0	18	18	26	30	10	1	0	67	0	0	134
Total	1	48	49	0	0	0	18	18	26	30	10	1	0	67	0	0	134
<b>Wax, Crystalline—Fully Refined</b>																	
Refinery	8	31	39	0	32	0	24	56	0	90	133	0	0	223	5	40	363
Total	8	31	39	0	32	0	24	56	0	90	133	0	0	223	5	40	363
<b>Wax, Crystalline—Other</b>																	
Refinery	5	67	72	0	1	0	4	5	0	160	0	0	0	160	0	27	264
Total	5	67	72	0	1	0	4	5	0	160	0	0	0	160	0	27	264
<b>Petroleum Coke</b>																	
Refinery	1,273	0	1,273	0	629	173	867	1,669	0	74	567	197	0	838	603	1,837	6,220
Total	1,273	0	1,273	0	629	173	867	1,669	0	74	567	197	0	838	603	1,837	6,220
<b>Asphalt</b>																	
Refinery	1,462	127	1,589	219	1,581	724	882	3,406	428	402	483	668	92	2,073	1,349	1,453	9,870
Bulk Terminal	1,810	318	2,128	134	1,078	379	426	2,017	0	0	119	68	0	187	0	382	4,714
Total	3,272	445	3,717	353	2,659	1,103	1,308	5,423	428	402	602	736	92	2,260	1,349	1,835	14,584
<b>Road Oil</b>																	
Refinery	0	0	0	0	33	0	0	33	0	0	0	2	0	2	3	27	65
Total	0	0	0	0	33	0	0	33	0	0	0	2	0	2	3	27	65
<b>Miscellaneous Products</b>																	
Refinery	379	48	427	1	81	13	11	106	87	543	195	77	0	902	0	260	1,695
Bulk Terminal	28	0	28	0	16	4	3	23	0	6	12	15	0	33	0	167	251
Pipeline	0	0	0	0	0	0	25	25	55	2	0	0	0	57	0	0	82
Natural Gas Processing Plant	0	0	0	0	3	0	(s)	4	59	1,031	1	55	(s)	1,146	2	0	1,151
Total	407	48	455	1	100	17	39	158	201	1,582	208	147	(s)	2,138	2	427	3,179
<b>Total Stocks, All Oils</b>	—	—	224,987	—	—	—	—	272,625	—	—	—	—	—	713,607	28,709	174,605	1,414,533

1 Crude oil data are not collected by refinery district.

2 Includes 33965 thousands of barrels of domestic crude oil.

(s) Less than 500 barrels.

Note: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

— Not Applicable.

Table 25. Movements of Crude Oil and Petroleum Products by Pipeline, Tanker, and Barge Between PAD Districts, September 1982  
(Thousands of Barrels)

Commodity	From I to			From II to			From III to			From IV to			From V to				
	II	III	V	I	III	IV	V	I	II	IV	V	II	III	V	I	II	III
Crude Oil	0	0	0	0	0	0	0	426	1,295	0	0	0	0	0	1,872	0	15,328
Petroleum Products	8,447	1,365	0	2,637	5,238	2,408	0	82,877	23,749	9	2,013	1,233	136	1,278	37	0	59
Natural Gasoline and Isopentane	0	0	0	0	339	0	0	0	1,139	0	0	355	24	0	0	0	0
Unfractionated Stream	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plant Condensate	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0
Liquefied Petroleum Gases	0	68	0	619	1,742	111	0	1,836	5,007	0	0	75	112	0	0	0	0
Unfinished Oils	8	869	0	81	0	0	0	1,301	66	0	0	0	0	0	0	0	0
Motor Gasoline Blending Components	0	0	0	0	0	0	0	0	509	0	0	0	0	0	0	0	0
Aviation Gasoline Blending Components	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finished Motor Gasoline	5,856	0	0	1,203	1,913	1,538	0	46,911	10,445	0	892	489	0	873	0	0	0
Finished Leaded Motor Gasoline	3,163	0	0	471	1,088	878	0	20,192	5,279	0	488	336	0	567	0	0	0
Finished Unleaded Motor Gasoline	2,693	0	0	732	825	660	0	26,719	5,166	0	404	153	0	306	0	0	0
Gasohol	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finished Aviation Gasoline	15	0	0	0	0	25	0	243	155	0	21	0	0	0	0	0	0
Naphtha-Type Jet Fuel	91	0	0	0	137	0	0	621	0	0	178	33	0	75	0	0	0
Kerosene-Type Jet Fuel	170	0	0	97	53	601	0	8,578	1,594	0	174	4	0	63	0	0	0
Kerosene	17	0	0	0	0	0	0	394	174	0	0	0	0	0	0	0	0
Distillate Fuel Oil	2,261	214	0	296	606	133	0	18,747	3,471	0	381	277	0	267	0	0	0
Distillate Fuel Oil Less No. 4	2,261	214	0	296	606	133	0	18,747	3,471	0	381	277	0	267	0	0	0
No. 4 Fuel Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residual Fuel Oil	0	101	0	167	407	0	0	2,546	231	0	0	0	0	0	11	0	0
Naphtha and Other Oils for Petro.																	
Feedstock	29	0	0	20	22	0	0	102	68	0	0	0	0	0	0	0	0
Special Naphthas	0	0	0	8	0	0	0	246	160	0	0	0	0	0	0	0	0
Lubricants	0	105	0	81	19	0	0	641	235	9	359	0	0	0	0	0	25
Wax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asphalt and Road Oil	0	0	0	65	0	0	0	270	400	0	0	0	0	0	0	0	0
Miscellaneous Products	0	8	0	0	0	0	0	441	92	0	8	0	0	0	26	0	34
Total All Products	8,447	1,365	0	2,637	5,238	2,408	0	83,303	25,044	9	2,013	1,233	136	1,278	1,909	0	15,387

Note: Total may not equal sum of components due to independent rounding.  
Sources: See Explanatory Notes on Data Collection and Estimation.

Table 26. Movements of Petroleum Products by Pipeline Between PAD Districts, September 1982  
(Thousands of Barrels)

Commodity	From I to		From II to				From III to				From IV to			
	II	I	I	III	IV	I	II	IV	V	II	III	V		
Natural Gasoline and Isopentane .....	0	0	0	339	0	0	1,139	0	0	355	24	0		
Unfractionated Stream .....	0	0	0	0	0	0	0	0	0	0	0	0		
Plant Condensate .....	0	0	0	0	0	0	3	0	0	0	0	0		
Liquefied Petroleum Gases .....	0	619	1,742	111	0	1,430	5,007	0	0	0	0	0		
Motor Gasoline Blending Components .....	0	0	0	0	0	0	509	0	0	75	112	0		
Aviation Gasoline Blending Components .....	0	0	0	0	0	0	0	0	0	0	0	0		
Finished Motor Gasoline .....	4,594	1,051	1,913	1,538	0	36,167	9,668	0	892	489	0	873		
Finished Leaded Motor Gasoline .....	2,549	404	1,088	878	0	15,654	4,749	0	488	336	0	567		
Finished Unleaded Motor Gasoline .....	1,985	647	825	660	0	20,513	4,919	0	404	153	0	306		
Gasohol .....	0	0	0	0	0	0	0	0	0	0	0	0		
Finished Aviation Gasoline .....	15	0	0	25	0	26	136	0	0	0	0	0		
Naphtha-Type Jet Fuel .....	0	0	137	0	0	351	0	0	178	33	0	75		
Kerosene-Type Jet Fuel .....	107	53	53	53	601	5,702	1,506	0	174	4	0	63		
Kerosene .....	6	0	0	0	0	258	174	0	0	0	0	0		
Distillate Fuel Oil .....	1,327	247	606	133	14,957	3,022	0	381	277	0	267	0		
Distillate Fuel Oil Less No. 4 .....	1,327	247	606	133	14,957	3,022	0	381	277	0	267	0		
No. 4 Fuel Oil .....	0	0	0	0	0	0	0	0	0	0	0	0		
Residual Fuel Oil .....	0	0	0	0	0	0	0	0	0	0	0	0		
Miscellaneous Products .....	0	0	0	0	0	0	75	0	0	0	0	0		
Total .....	5,989	1,970	4,790	2,408	58,891	21,239	0	1,625	1,233	136	1,278	0		

Note: Total may not equal sum of components due to independent rounding.

Note: Total may not equal sum of components due to independent rounding.  
Source: See Explanatory Notes on Data Collection and Estimation.

Table 27. Movements of Crude Oil and Petroleum Products by Tanker and Barge Between PAD Districts, September 1982  
(Thousands of Barrels)

Commodity	From I to			From II to			From III to				From V to		
	II	III	V	I	III	V	I	New Eng	Cent Atl	Low Atl	II	V	III
<b>Crude Oil</b> .....	0	0	0	0	0	0	426	0	426	0	1,872	0	15,328
<b>Petroleum Products</b> .....	2,458	1,365	0	667	448	0	23,986	2,396	4,175	17,415	2,510	388	59
Liquefied Petroleum Gases .....	0	68	0	0	0	0	406	0	0	406	0	0	0
Unfinished Oils .....	8	869	0	81	0	0	1,301	0	1,184	117	66	0	0
Finished Motor Gasoline .....	1,322	0	0	152	0	0	10,744	694	607	9,443	777	0	0
Finished Aviation Gasoline .....	0	0	0	0	0	0	217	41	37	139	19	21	0
Naphtha-Type Jet Fuel .....	91	0	0	0	0	0	270	5	0	265	0	0	0
Kerosene-Type Jet Fuel .....	63	0	0	44	0	0	2,876	377	145	2,354	88	0	0
Kerosene .....	11	0	0	0	0	0	136	0	90	46	0	0	0
Distillate Fuel Oil .....	934	214	0	49	0	0	3,790	1,050	289	2,451	449	0	0
Residual Fuel Oil .....	0	101	0	167	407	0	2,546	166	788	1,592	231	0	0
Naphtha and Other Oils for Petro. Feed. Use .....	29	0	0	20	22	0	102	0	11	91	68	0	0
Special Naphthas .....	0	0	0	8	0	0	246	21	174	51	160	0	0
Lubricants .....	0	105	0	81	19	0	641	30	410	201	235	359	25
Wax .....	0	0	0	0	0	0	270	0	0	0	0	0	0
Asphalt and Road Oil .....	0	0	0	65	0	0	0	0	37	233	400	0	0
Miscellaneous Products .....	0	8	0	0	0	0	441	12	403	26	17	8	34
<b>Total</b> .....	2,458	1,365	0	667	448	0	24,412	2,396	4,601	17,415	3,805	388	15,387

Note: Total may not equal sum of components due to independent rounding.

Table 28. Net Movements of Crude Oil and Petroleum Products by Pipeline, Tanker and Barge Between PAD Districts, September 1982  
(Thousands of Barrels)

Commodity	P.A.D. District I			P.A.D. District II			P.A.D. District III			P.A.D. District IV			P.A.D. District V		
	Receipts into PADD I	Shipments from PADD I	Net Receipts PADD I	Receipts into PADD II	Shipments from PADD II	Net Receipts PADD II	Receipts into PADD III	Shipments from PADD III	Net Receipts PADD III	Receipts into PADD IV	Shipments from PADD IV	Net Receipts PADD IV	Receipts into PADD V	Shipments from PADD V	Net Receipts PADD V
<b>Crude Oil</b>	2,298	0	2,298	1,295	0	1,295	15,328	1,721	13,607	0	0	0	0	17,200	-17,200
<b>Petroleum Products</b>	85,551	9,812	75,739	33,429	10,283	23,146	6,798	108,648	-101,850	2,417	2,647	3,291	3,291	96	3,195
Natural Gasoline	0	0	0	1,494	339	1,155	363	1,139	-776	0	379	0	0	0	0
Unfractionated Stream	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Plant Condensate	0	0	0	3	0	3	0	3	-3	0	0	0	0	0	0
Liquefied Petroleum Gases	2,455	68	2,387	5,082	2,472	2,610	1,922	6,843	-4,921	111	187	0	0	0	0
Unfinished Oils	1,382	877	505	74	81	-7	869	1,367	-498	0	0	0	0	0	0
Motor Gasoline Blending Components	0	0	0	509	0	509	0	509	-509	0	0	0	0	0	0
Aviation Gasoline Blending Components	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finished Motor Gasoline	48,114	5,856	42,258	16,790	4,654	12,136	1,913	58,248	-56,335	1,538	1,362	1,765	1,765	0	1,765
Finished Leaded Motor Gasoline	20,663	3,163	17,500	8,778	2,437	6,341	1,088	25,959	-24,871	878	903	1,055	1,055	0	1,055
Finished Unleaded Motor Gasoline	27,451	2,693	24,758	8,012	2,217	5,795	825	32,289	-31,464	660	459	201	710	0	710
Gasohol	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Finished Aviation Gasoline	243	15	228	170	25	145	0	419	-419	25	0	25	21	0	21
Naphtha-Type Jet Fuel	621	91	530	124	137	-13	137	799	-662	0	108	253	253	0	253
Kerosene-Type Jet Fuel	8,675	170	8,505	1,768	751	1,017	53	10,346	-10,293	601	67	594	237	0	237
Kerosene	394	17	377	191	0	191	0	568	-568	0	0	0	0	0	0
Distillate Fuel Oil	19,043	2,475	16,568	6,009	1,035	4,974	820	22,599	-21,779	133	544	648	648	0	648
Distillate Fuel Oil Less No. 4	19,043	2,475	16,568	6,009	1,035	4,974	820	22,599	-21,779	133	544	648	648	0	648
No. 4 Fuel Oil	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Residual Fuel Oil	2,724	101	2,623	231	574	-343	508	2,777	-2,269	0	0	0	0	11	-11
Naphtha and Other Oils for Petro.															
Feedstock Use	122	29	93	97	42	55	22	170	-148	0	0	0	0	0	0
Special Naphthas	254	0	254	160	8	152	0	406	-406	0	0	0	0	0	0
Lubricants	722	105	617	235	100	135	149	1,244	-1,095	9	0	359	359	25	334
Wax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asphalt and Road Oil	335	0	335	400	65	335	0	670	-670	0	0	0	0	0	0
Miscellaneous Products	467	8	459	92	0	92	42	541	-499	0	0	8	8	60	-52
<b>Total All Products</b>	87,849	9,812	78,037	34,724	10,283	24,441	22,126	110,369	-88,243	2,417	2,647	3,291	3,291	17,296	-14,005

Note: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.

Table 29. Production of No.4 Fuel Oil and Residual Fuel Oil By Sulfur Content, September 1982  
(Thousands of Barrels)

Commodity	PAD District I			PAD District II					PAD District III				PAD District IV		United States	
	East Coast	Appalachian #1	Total	Appalachian #2	Ind., Ill., Ky.	Minn., Wisc., Dak.	Okla., Kans., Mo.	Total	Texas Inland	Texas Gulf Coast	La. Gulf Coast		No. La., Ark.	New Mexico		Total
											Rocky Mt.	Dist. V West Coast				
No. 4 Fuel Oil																
0.00 to 0.30% Sulfur	0	1	1	0	37	0	0	0	37	34	367	27	55	205	688	23
0.31 to 0.50% Sulfur	0	1	1	0	0	0	0	0	0	0	211	-57	3	0	157	0
0.51 to 1.00% Sulfur	0	0	0	0	0	0	0	0	0	9	0	0	0	0	9	23
1.01 to 2.00% Sulfur	0	0	0	0	2	0	0	2	7	156	0	0	1	205	369	0
Greater Than 2.00% Sulfur	0	0	0	0	0	0	0	0	18	0	0	0	0	0	18	0
					35	0	0	35	0	0	0	84	51	0	135	0
Residual Fuel Oil	3,273	139	3,412	38	1,899	275	455	2,667	555	7,920	5,916	470	83	14,944	299	8,895
0.00 to 0.30% Sulfur	365	28	393	0	0	0	0	0	78	496	33	117	22	746	29	7
0.31 to 0.50% Sulfur	1,090	0	1,090	0	40	0	125	165	47	163	40	112	0	362	110	1,390
0.51 to 1.00% Sulfur	1,311	0	1,311	38	701	0	187	926	343	1,399	1,172	154	47	3,115	28	1,768
1.01 to 2.00% Sulfur	199	111	310	0	753	87	119	959	73	513	831	14	14	1,445	71	5,277
Greater Than 2.00% Sulfur	308	0	308	0	405	188	24	617	14	5,349	3,840	73	0	9,276	61	454
																10,716

Note: Total may not equal sum of components due to rounding.

Note: Total may not equal sum of components due to independent rounding.  
Source: See Explanatory Notes on Data Collection and Estimation.

Table 30. Stocks of No.4 Fuel Oil and Residual Fuel Oil By Sulfur Content, September 1982  
(Thousands of Barrels)

Commodity	PAD District I			PAD District II					PAD District III					PAD District IV			United States
	East Coast	Appalachian #1	Total	Appalachian #2	Ind., Ill., Ky.	Minn., Wisc., Dak.	Okla., Kans., Mo.	Total	Texas Inland	Texas Gulf Coast	La. Gulf Coast	No. La., Ark.	New Mexico	Total	Rocky Mt.	Dist. V West Coast	
<b>No. 4 Fuel Oil -- 0.00 to 0.30% Sulfur</b>																	
Refinery .....	0	8	8	0	2	0	0	0	2	0	54	26	4	0	84	0	94
Bulk Terminal .....	417	0	417	0	0	0	0	0	0	0	0	0	1	0	1	0	418
Total .....	417	8	425	0	2	0	0	0	2	0	54	26	5	0	85	0	512
<b>No.4 Fuel Oil -- 0.31 to 0.50% Sulfur</b>																	
Refinery .....	0	0	0	0	5	0	0	0	5	1	0	1	0	0	2	6	20
Bulk Terminal .....	34	0	34	0	0	0	0	0	0	0	0	0	0	0	0	0	34
Total .....	34	0	34	0	5	0	0	0	5	1	0	1	0	0	2	6	54
<b>No. 4 Fuel Oil -- 0.51 to 1.00% Sulfur</b>																	
Refinery .....	0	0	0	0	15	0	0	0	15	41	390	33	3	51	518	0	547
Bulk Terminal .....	430	0	430	0	197	25	0	0	222	0	0	0	0	0	0	0	652
Total .....	430	0	430	0	212	25	0	0	237	41	390	33	3	51	518	0	1,199
<b>No. 4 Fuel Oil -- 1.01 to 2.00% Sulfur</b>																	
Refinery .....	0	0	0	0	0	0	0	0	0	6	0	0	0	0	6	0	8
Bulk Terminal .....	376	0	376	0	0	0	0	0	0	0	0	0	0	0	0	30	406
Total .....	376	0	376	0	0	0	0	0	0	6	0	0	0	0	6	32	414
<b>No.4 Fuel Oil -- Greater Than 2.00% Sulfur</b>																	
Refinery .....	0	0	0	0	35	0	0	0	35	0	0	117	37	0	154	0	202
Bulk Terminal .....	63	2	65	11	1	0	0	0	12	0	0	0	0	0	0	0	77
Total .....	63	2	65	11	36	0	0	0	47	0	0	117	37	0	154	0	279
<b>Residual Fuel Oil -- 0.00 to 0.30% Sulfur</b>																	
Refinery .....	280	26	306	0	0	0	6	6	6	134	166	31	12	24	367	94	1,305
Bulk Terminal .....	4,729	0	4,729	0	21	0	0	21	0	0	0	1,802	7	0	1,809	0	6,565
Total .....	5,009	26	5,035	0	21	0	6	27	134	166	166	1,833	19	24	2,176	94	7,870
<b>Residual Fuel Oil -- 0.31 to 0.50% Sulfur</b>																	
Refinery .....	1,125	3	1,128	0	93	3	12	108	50	253	21	175	0	0	499	31	3,064
Bulk Terminal .....	1,753	0	1,753	0	98	0	74	172	0	200	131	0	0	0	331	0	2,256
Total .....	2,878	3	2,881	0	191	3	86	280	50	453	152	175	0	0	830	31	5,320
<b>Residual Fuel Oil -- 0.51 to 1.00% Sulfur</b>																	
Refinery .....	908	0	908	47	830	0	85	962	82	1,306	1,165	95	57	2,705	11	1,580	6,166
Bulk Terminal .....	5,482	40	5,522	64	644	6	185	899	75	680	80	0	0	835	0	479	7,735
Total .....	6,390	40	6,430	111	1,474	6	270	1,861	157	1,986	1,245	95	57	3,540	11	2,059	13,901
<b>Residual Fuel Oil -- 1.01 to 2.00% Sulfur</b>																	
Refinery .....	730	38	768	0	789	153	154	1,096	50	398	596	12	1	1,057	78	4,051	7,050
Bulk Terminal .....	2,356	88	2,444	136	464	68	678	1,346	0	291	495	0	0	786	0	1,585	6,161
Total .....	3,086	126	3,212	136	1,253	221	832	2,442	50	689	1,091	12	1	1,843	78	5,636	13,211
<b>Residual Fuel Oil -- Greater than 2.00% Sulfur</b>																	
Refinery .....	505	21	526	0	583	188	9	780	13	3,173	1,461	148	0	4,795	237	340	6,678
Bulk Terminal .....	10,733	168	10,901	0	166	39	190	395	28	1,591	1,319	95	0	3,033	0	502	14,831
Total .....	11,238	189	11,427	0	749	227	199	1,175	41	4,764	2,780	243	0	7,828	237	842	21,509
<b>Residual Fuel Oil -- Sulfur Content Not Specified</b>																	
Pipeline .....	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	13	14
Total .....	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	13	14

Note: Total may not equal sum of components due to independent rounding.  
Sources: See Explanatory Notes on Data Collection and Estimation.



Table 31. Imports of Residual Fuel Oil by Sulfur Content by Country of Origin, September 1982  
(Thousands of Barrels)

Country	Residual Fuel Oil						Not Specified	Total
	0.00 to 0.30%	0.31 to 0.50%	0.51 to 1.00%	1.01 to 2.00%	Greater Than 2.00%			
<b>Arab OPEC</b>								
Algeria .....	2,649	0	0	0	0	0	0	2,649
Iraq .....	0	0	0	0	0	0	0	0
Kuwait .....	0	0	0	0	0	0	0	0
Qatar .....	0	0	0	0	0	0	0	0
Saudi Arabia .....	0	0	0	0	0	0	0	0
United Arab Emirates .....	0	0	0	0	0	0	0	0
Subtotal Arab OPEC .....	2,649	0	0	0	0	0	0	2,649
<b>Other OPEC</b>								
Ecuador .....	0	0	0	0	0	0	0	0
Gabon .....	0	0	0	117	0	0	0	117
Indonesia .....	0	12	3	4	0	0	0	18
Iran .....	0	0	0	0	0	0	0	0
Nigeria .....	0	0	0	0	0	0	0	0
Venezuela .....	1,295	685	487	1,333	3,718	0	0	7,520
Subtotal Other OPEC .....	1,295	698	490	1,454	3,718	0	0	7,655
<b>Other</b>								
Angola .....	0	267	0	0	0	0	0	267
Australia .....	0	0	0	0	0	0	0	0
Bahamas .....	590	109	0	0	1,130	0	0	1,829
Bolivia .....	0	0	0	0	0	0	0	0
Brazil .....	326	0	0	0	0	0	0	326
Brunei .....	0	92	0	0	0	0	0	92
Canada .....	5	0	406	51	3	(s)	0	466
Congo .....	0	0	0	0	0	0	0	0
Egypt .....	0	0	0	0	18	0	0	18
France .....	0	0	0	0	0	0	0	0
Ghana .....	0	0	0	0	0	0	0	0
Liberia .....	0	0	0	0	0	0	0	0
Malaysia .....	0	0	0	0	0	0	0	0
Mexico .....	0	0	0	0	0	0	0	0
Netherlands .....	0	0	0	0	1,308	0	0	1,308
Netherlands Antilles .....	0	0	0	0	83	0	0	83
Norway .....	0	0	0	40	4,830	0	0	4,870
Oman .....	0	0	0	0	0	0	0	0
People's Republic of China .....	0	0	0	0	0	0	0	0
Peru .....	355	0	0	0	0	0	0	355
Puerto Rico .....	180	0	1,188	0	0	0	0	1,543
Romania .....	0	0	0	0	0	0	0	0
Spain .....	0	0	0	0	0	0	0	0
Syria .....	0	0	0	0	0	0	0	0
Trinidad .....	0	0	0	0	0	0	0	0
Tunisia .....	0	0	0	389	0	0	0	389
United Kingdom .....	0	0	0	0	0	0	0	0
Virgin Islands .....	528	0	0	675	0	0	0	675
Yugoslavia .....	0	332	440	388	1,360	0	0	3,049
Zaire .....	0	0	0	0	0	0	0	0
Other Western Hemisphere .....	0	0	0	0	0	0	0	0
Other Eastern Hemisphere .....	0	88	77	43	0	0	0	502
Subtotal Other .....	1,965	888	2,614	1,592	8,732	(s)	0	209
<b>Total Imports</b>	<b>5,929</b>	<b>1,586</b>	<b>3,104</b>	<b>3,047</b>	<b>12,450</b>	<b>(s)</b>	<b>(s)</b>	<b>26,116</b>

(s) Less than 500 barrels.  
Notes: Total may not equal sum of components due to independent rounding.

Table 32. Imports of Residual Fuel Oil by Sulfur Content by State of Entry, September 1982

State	Residual Fuel Oil					
	0.00 to 0.30%	0.31 to 0.50%	0.51 to 1.00%	1.01 to 2.00%	Greater Than 2.00%	Not Specified
PAD District I	5,924	1,064	2,459	2,989	11,384	(s)
Connecticut	0	0	190	0	0	23,820
Delaware	241	356	0	0	0	190
Florida	0	0	440	0	0	597
Georgia	0	0	0	0	2,010	0
Maine	0	0	0	0	200	2,450
Maryland	0	0	0	150	791	200
Massachusetts	0	0	264	601	191	941
New Jersey	907	291	73	0	2,572	1,056
New York	4,538	263	1,352	1,584	1,353	2,572
North Carolina	0	0	0	340	2,006	2,625
Pennsylvania	238	154	0	52	327	9,742
Rhode Island	0	0	139	0	0	578
South Carolina	0	0	0	0	0	771
Virginia	0	0	0	363	216	139
					1,379	216
						1,742
PAD District II	0	0	112	6	3	0
North Dakota	0	0	0	6	3	121
Ohio	0	0	112	0	0	9
						112
PAD District III	0	329	453	0	843	0
Louisiana	0	0	453	0	498	1,625
Texas	0	329	0	0	345	951
						674
PAD District IV	0	0	0	0	0	0
PAD District V	5	192	80	52	220	0
California	0	0	0	0	220	549
Hawaii	0	192	80	52	0	220
Washington	5	0	0	0	0	324
						5
All PAD Districts	5,929	1,586	3,104	3,047	12,450	(s)
						26,116

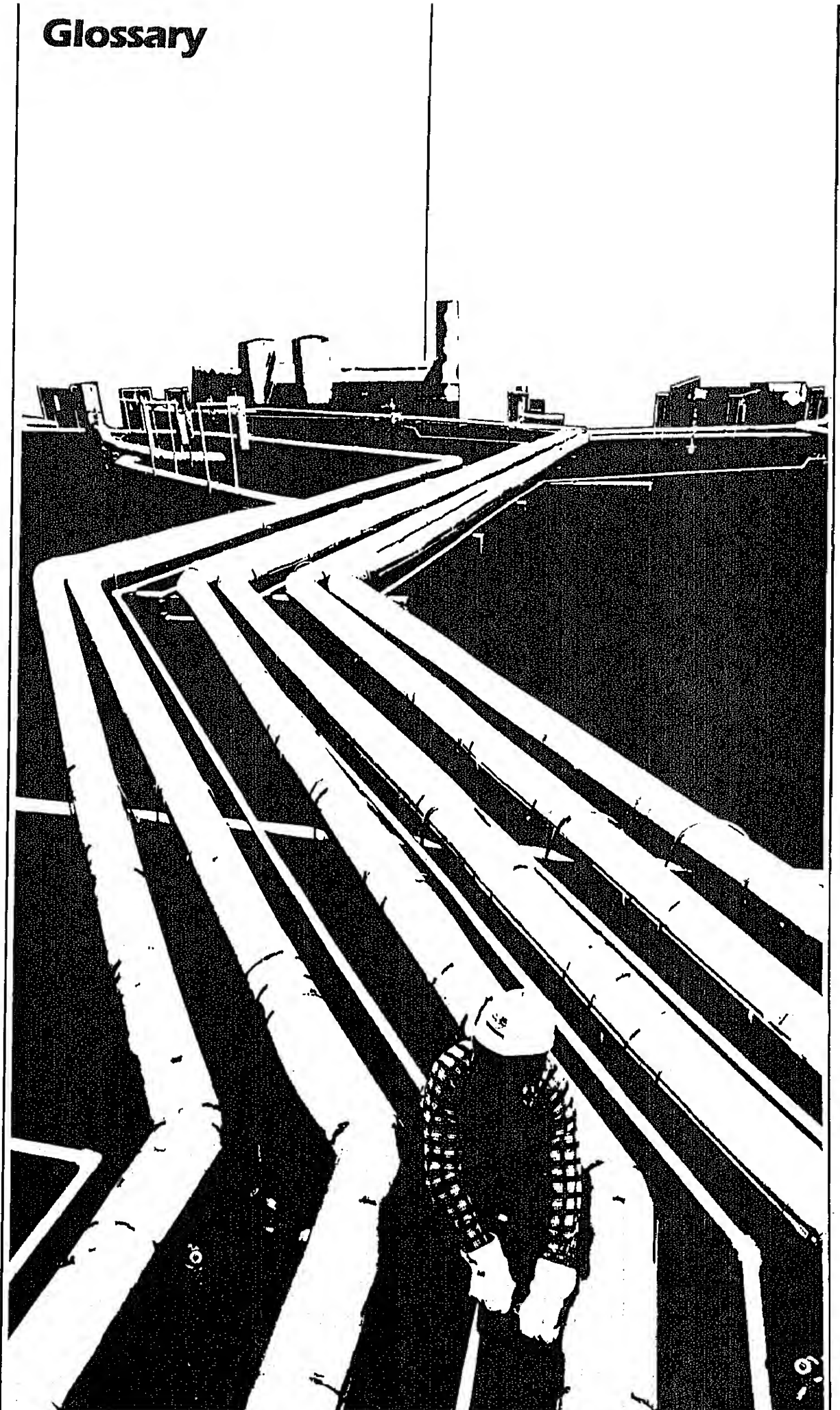
(s) Less than 500 barrels.

Note: Total may not equal sum of components due to independent rounding.

Sources: See Explanatory Notes on Data Collection and Estimation.



# Glossary



# Glossary

## Definitions of Petroleum Products and Other Terms

**Alcohol.** The family name of a group of organic chemical compounds composed of carbon, hydrogen, and oxygen. The series of molecules vary in chain length and are composed of a hydrocarbon plus a hydroxyl group,  $\text{CH}(\text{CH})_n\text{-OH}$ . "Alcohol" includes ethanol and methanol.

**Asphalt.** A dark-brown-to-black cement-like material, containing bitumens as the predominant constituents, obtained by petroleum processing. The definition includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts. The conversion factor is 5.5 42-gallon barrels per short ton.

**ASTM.** The acronym for the American Society for Testing and Materials.

**Aviation Gasoline Blending Components.** Finished components in the gasoline range which will be used for blending or compounding into finished aviation gasoline.

**Aviation Gasoline (Finished).** All special grades of gasoline for use in aviation reciprocating engines, as given in ASTM Specification D 910 and Military Specification MIL-G-5572.

**Barrel.** A volumetric unit of measure for crude oil and petroleum products equivalent to 42 U.S. gallons. This measure is used in most statistical reports. Factors for converting petroleum coke, asphalt, and wax to barrels are given in the definitions for these products.

**Butane.** A normally gaseous paraffinic hydrocarbon,  $\text{C}_4\text{H}_{10}$ . It is extracted from natural gas or refinery gas streams. Butane is covered by ASTM Specification D1835 and Gas Processors Association Specification for commercial butane.

- **Normal Butane**—A saturated straight-chain hydrocarbon of butane. It is a colorless paraffinic gas that boils at a temperature of  $31.1^\circ\text{F}$ . This classification includes mixtures of gases that contain 80 percent or more normal butane.

- **Other Butanes**—All butanes not included as normal butane or isobutane.

**Butane-Propane Mixtures.** Mixtures consisting exclusively of butane and propane that conform to ASTM Specification D1835 and Gas Processors Specification for commercial butane-propane. They are extracted from natural gas and refinery gas streams.

**Butylene.** An olefinic hydrocarbon,  $\text{C}_4\text{H}_8$ , recovered from refinery processes. It is reported in the "Butane" category.

**Coal.** A generic term applied to carbonaceous rocks that were formed by the partial or complete decomposition of vegetation. These stratified carbonaceous rocks are either solid or brittle and are highly combustible. Includes lignite, bituminous coal, and anthracite which conform to ASTM Specification D 388.

**Crude Oil (including Lease Condensate).** A mixture of hydrocarbons that existed in liquid phase in underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. Lease condensate is included. Drips are also included, but topped crude (residual) oil and other unfinished oils are excluded. Liquids produced at natural gas processing plants and mixed with crude oil are likewise excluded where identifiable. Crude oil is considered as either domestic or foreign, according to the following:

- **Domestic**—Crude oil produced in the United States or from its outer continental shelf as defined in 43 U.S.C. 1331. Hydrocarbons such as shale oil and tar sand oil are included.

- **Foreign**—Crude oil produced outside the United States. Imported Athabasca hydrocarbons are included.

**Distillate Fuel Oil.** A general classification for one of the petroleum fractions produced in conventional distillation operations. It is used primarily for space heating, on- and off-highway diesel engine fuel (including railroad engine fuel and fuel for agricultural machinery), and electric power generation. Included are products known as No. 1 and No. 2 heating oils, No. 1 and No. 2 diesel fuel oils, and No. 4 fuel oil.

- **No. 1 Fuel Oil**—A light distillate fuel oil intended for vaporizing pot-type burners. ASTM Specification D 396 specifies for this grade maximum distillation temperatures of 400° F. at the 10-percent point and 550° F. at the 90-percent point, and kinematic viscosities between 1.4 and 2.2 centistokes at 100° F.

- **No. 2 Fuel Oil**—A distillate fuel oil for domestic heating for use in atomizing-type burners or for moderate capacity commercial-industrial burner units. ASTM Specification D 396 specifies for this grade temperatures at the 90-percent point between 540° and 640° F., and kinematic viscosities between 2.0 and 3.6 centistokes at 100° F.

- **No. 1 and No. 2 Diesel Fuel Oils**—Distillate fuel oils used in compression-ignition engines, as given by ASTM Specification D 975:

1. **No. 1-D**—A volatile distillate fuel oil in the 400° to 550° F. boiling range for engines in service requiring frequent speed and load changes. Type C-B diesel fuel, which is used for city buses and similar operations, is included.

2. **No. 2-D**—A distillate fuel oil of lower volatility in the 540° to 640° F. boiling range for engines in industrial and heavy mobile service. Type R-R diesel fuel for railroad compression-ignition engines and Type T-T for diesel-engine trucks are included.

- **No. 4 Fuel Oil**—A fuel oil for commercial burner installations not equipped with preheating facilities. It is used extensively in industrial plants. This grade is a blend of distillate fuel oil and residual fuel oil stocks that conforms to ASTM Specification D 396 or Federal Specification VV-F-815C; its kinematic viscosity is between 5.8 and 26.4 centistokes at 100° F. Also included is No. 4-D, a fuel oil for low- and medium-speed diesel engines that conforms to ASTM Specification D 975.

**Eastern Hemisphere.** That half of the earth east of the Atlantic Ocean which includes Europe, Asia, Africa, and Australia. The Hawaiian Foreign Trade Zone is in this hemisphere.

**Electric Energy (Purchased).** Electricity purchased for refinery operations that is not produced within the refinery complex.

**Ethane.** A normally gaseous paraffinic hydrocarbon,  $C_2H_6$ , extracted from natural gas and refinery gas streams. "Ethane" includes any product containing 90 percent liquid volume or more ethane.

**Ethane-Propane Mixtures.** Mixtures of ethane and propane in which neither component is 90 percent or more of the liquid volume. It is extracted from natural gas and refinery gas streams.

**Ethylene.** An olefinic hydrocarbon,  $C_2H_4$ , recovered from refinery and petrochemical processes. It is reported in the "Ethane" category.

**Field Production.** Represents crude oil production on leases, natural gas liquids production at natural gas processing plants, and new supply of other hydrocarbons and alcohol.

**Gas Well Gas.** Natural gas produced from gas wells. Such gas may be either associated gas or non-associated gas.

- **Associated Gas**—Free natural gas in immediate contact, but not in solution, with crude oil in the reservoir.

- **Non-Associated Gas**—Free natural gas not in contact with, nor dissolved in, crude oil in the reservoir.

**Imported Crude Oil Burned as Fuel.** The amount of foreign crude oil burned as a fuel oil, usually as residual fuel oil, without being processed as such. "Imported crude oil burned as fuel" includes lease condensate and liquid hydrocarbons produced from tar sand oil, gilsonite, and oil shale.

**Isobutane.** A saturated branch-chain isomer of butane. It is a colorless paraffinic gas that boils at a temperature of 10.9° F. This classification includes mixtures of gases that contain 80 percent liquid volume or more isobutane. It is extracted from natural gas and refinery gas streams.

**Isopentane.** A saturated branch-chain hydrocarbon,  $C_5H_{12}$ , obtained by fractionation of natural gasoline or isomerization of normal pentane.

**Kerosene.** A petroleum distillate that boils at a temperature between 300° and 550° F., that has a flash point higher than 100° F. by ASTM Method D 56, that has a gravity range from 40° to 46° API, and that has a burning point in the range of 150° to 175° F. It is a clean-burning product suitable for use as an illuminant when burned in wick lamps. Includes grades of kerosene called range oil having properties similar to No. 1 fuel oil, but with a gravity of about 43° API and having a maximum end-point of 625° F. Kerosene is used in space heaters, cook stoves, and water heaters.

**Kerosene-Type Jet Fuel.** A quality kerosene product with an average gravity of 40.7° API, a 10-percent distillation temperature of 400° F., and an end-point of 572° F. It is covered by ASTM Specification D 1655 and Military Specification MIL-T-5624L (Grade JP-5 and JP-8). It is used primarily for commercial turbojet and turboprop aircraft engines.

**Lease Condensate.** A natural gas liquid recovered from gas well gas (associated and non-associated) in lease separators or natural gas field facilities. Lease condensate consists primarily of pentanes and heavier hydrocarbons.

**Lease Separator.** A surface facility used for separating casinghead gas from produced crude oil and water and separating gas from that portion of associated gas and non-associated gas that liquefies at the temperature and pressure conditions of the separator.

**Liquefied Petroleum Gases (LPG).** Propane, propylene, butanes, butylene, ethane-propane mixtures and isobutane produced at refineries or natural gas processing plants, including plants that fractionate raw natural gas plant liquids. Formerly called "Liquefied Gases."

**Liquefied Refinery Gases (LRG).** Liquefied petroleum gases fractionated from refinery or still gases. Through compression and/or refrigeration they are retained in the liquid state. The reported categories are ethane and/or ethylene, propane and/or propylene, butane and/or butylene, butane-propane mixtures, and isobutane. Excludes still gases used for chemical or rubber manufacture which are reported as petrochemical feedstocks and also excludes liquefied gases ready for blending into gasoline which are reported as gasoline blending components. Liquefied refinery gases are reported for use as petrochemical feedstocks, other uses, or both.

**Lubricants.** A substance used to reduce friction between bearing surfaces. Petroleum lubricants may be produced either from distillates or residues. Other substances may be added to impart or improve certain required properties. "Lubricants" includes all grades of lubricating oils from spindle oil to cylinder oil and those used in greases. The three categories reported are:

- **Bright Stock**—A refined, high viscosity lubricating oil base stock that is usually made from residuum by a treatment such as deasphalting, acid treatment, or solvent extraction.
- **Neutral**—A distillate lubricating oil base stock with a viscosity that is usually not above 55 Saybolt Universal Seconds (SUS) at 100° F. It is prepared by a treatment such as hydrofining, acid treatment, or solvent extraction.
- **Other**—A lubricating oil base stock used in finished lubricating oils and greases, including black, coastal, and red oils.

**Miscellaneous Products.** Includes all finished products not classified elsewhere. "Miscellaneous products" include petrolatum, absorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, and other finished products.

**Motor Gasoline Blending Components.** Finished components in the gasoline range that will be used for blending or compounding into finished motor gasoline. Pool gasoline is included in this category.

**Motor Gasoline (Finished).** A complex mixture of relatively volatile hydrocarbons, with or without small quantities of additives, that have been blended to form a fuel suitable for use in spark-ignition engines.

engines. Specifications for motor gasoline, as given in ASTM Specification D 439 or Federal Specification VV-G-1690B, include a boiling range of 122° to 158° F. at the 10-percent point to 365° to 374° F. at the 90-percent point and a Reid vapor pressure range from 9 to 15 psi. "Motor gasoline" includes finished leaded gasoline, finished unleaded gasoline, and gasohol. Blendstock is excluded until blending has been completed. Alcohol that is to be used in the blending of gasohol is also excluded.

- **Finished Leaded Gasoline**—Contains more than 0.05 grams of lead per gallon or more than 0.005 grams of phosphorus per gallon. The actual lead content of any given gallon, however, may vary as a function of the size of the producer and company according to specific Environmental Protection Agency waiver provisions. Premium and regular grades are included, depending on the octane rating.
- **Finished Unleaded Gasoline**—Contains up to 0.05 grams of lead per gallon and 0.005 grams of phosphorus per gallon. Premium and regular grades are included, depending on the octane rating.
- **Gasohol**—A blend of alcohol and finished motor gasoline that is no more than 90 percent of finished motor gasoline (leaded or unleaded as described above) and no less than 10 percent or more alcohol (ethanol or methanol).

**Motor Gasoline (Total).** Includes finished leaded motor gasoline, finished unleaded motor gasoline, motor gasoline blending components, and gasohol.

**Naphtha-Type Jet Fuel.** A fuel in the heavy naphtha boiling range with an average gravity of 52.8° API and 20 to 90 percent distillation temperatures of 290° to 470° F., meeting Military Specification MIL-T-5624L (Grade JP-4). JP-4 is used for turbojet and turboprop aircraft engines, primarily by the military. This category excludes ram-jet and petroleum rocket fuels, which are included in the "Miscellaneous Products" category.

**Natural Gas.** A mixture of hydrocarbons and small quantities of various nonhydrocarbons existing in the gaseous phase or in solution with crude oil in underground reservoirs.

**Natural Gas Field Facility.** A field facility designed to process natural gas produced from more than one lease for the purpose of recovering condensate from a stream of natural gas; however, some field facilities are designed to recover propane, butane, natural gasoline, etc., and to control the quality of natural gas to be marketed.

**Natural Gas Plant Liquids.** Natural gas liquids recovered from natural gas in gas processing plants, and in some situations, from natural gas field facilities. Natural gas liquids extracted by fractionators are also included. These liquids are defined according to the published specifications of the Gas Processors Association and the American Society for Testing and Materials, and are classified as follows: Ethane, propane, ethane-propane mix, isobutane, butane, butane-propane mix, isopentane, natural gasoline, plant condensate, unfractionated stream, and other products from natural gas processing plants (i.e., products meeting the standards of finished petroleum products produced at natural gas processing plants, such as finished motor gasoline, finished aviation gasoline, special naphthas, kerosene, distillate fuel oil, and miscellaneous products).

**Natural Gas Processing Plant.** A facility designed to recover natural gas liquids from a stream of natural gas that may or may not have been processed through lease separators or natural gas field facilities. The facility also controls the quality of natural gas to be marketed. Cycling plants are classified as gas processing plants.

**Natural Gasoline.** A mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas, that meets vapor pressure, end-point, and other specifications for natural gasoline set by the Gas Producers Association.

**OPEC.** The acronym for the Organization of Petroleum Exporting Countries, oil-producing and-exporting countries that have organized for the purpose of negotiating with oil companies on matters of oil production, prices, and future concession rights. Current members are Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, United Arab Emirates, and Venezuela.

**Operable Distillation Capacity.** The maximum amount of input that can be processed by a crude oil distillation unit in a 24-hour period, making allowances for processing limitations due to types and



grades of inputs, limitations of downstream facilities, scheduled and unscheduled downtimes, and environmental constraints. Includes any shutdown capacity that could be placed in operation within 90 days.

**Other Hydrocarbons.** Materials received by a refinery and consumed as raw materials. Includes hydrogen, coal, tar derivatives, gilsonite, and natural gas received by the refinery for reforming into hydrogen. Natural gas to be used as fuel is excluded.

**Petrochemical Feedstocks.** Chemical feedstocks derived from petroleum, principally for the manufacture of synthetic rubber and a variety of plastics. The categories reported are "Naphtha-less than 400° F. end-point" and "Other oils over 400° F. end-point."

- Naphtha less than 400° F. end-point—A naphtha with an end point of less than 400° F. and that is reported as used as a petrochemical feedstock.
- Other oils over 400° F. end-point—Oils with an end point over 400° F. and that are reported as used as a petrochemical feedstock.

**Petroleum Coke.** A residue, the final product of the condensation process in cracking. This product is reported as marketable coke or catalyst coke. The conversion factor is 5 42-gallon barrels per short ton.

- Marketable Coke—Those grades of coke that are produced in delayed or fluid cokers and which may be recovered as relatively pure carbon. This "green" coke may be sold or further purified by calcining.
- Catalyst Coke—In many catalytic operations (i.e., catalytic cracking) carbon is deposited on the catalyst, thus deactivating the catalyst. The catalyst is reactivated by burning off the carbon, which is used as fuel in the refinery process. This carbon or coke is not recoverable in a concentrated form.

**Petroleum Products.** Petroleum products are obtained from the processing of crude oil (including lease condensate), natural gas, and other hydrocarbon compounds. Petroleum products include unfinished oils, natural gasoline and isopentane, plant condensate, unfractionated stream, ethane, liquefied petroleum gases, aviation gasoline, motor gasoline, naphtha-type jet fuel, kerosene-type jet fuel, kerosene, distillate fuel oil, residual fuel oil, naphtha less than 400° F. end-point, other oils-over 400° F. end-point, special naphthas, lubricants, waxes, petroleum coke, asphalt, road oil, still gas, and miscellaneous products.

**Petroleum Refinery.** An installation that manufactures finished petroleum products from crude oil, unfinished oils, natural gas plant liquids, other hydrocarbons, and alcohol.

**Plant Condensate.** One of the natural gas plant liquids, mostly pentanes and heavier hydrocarbons, recovered and separated as liquids at gas inlet separators or scrubbers in processing plants.

**Primary Stocks.** Stocks of crude oil or petroleum products held in storage at (or in) leases, refineries, natural gas processing plants, pipelines, tankfarms, and bulk terminals that can store at least 50,000 barrels of petroleum products or that can receive petroleum products by tanker, barge, or pipeline. Crude oil that is in transit from Alaska, or that is stored on Federal leases or in the Strategic Petroleum Reserve is included. "Primary Stocks" excludes stocks of foreign origin that are held in bonded warehouse storage.

**Propane.** A normally gaseous hydrocarbon,  $C_3H_8$ , extracted from natural gas and refinery gas streams. It is used primarily as a fuel and as a petrochemical feedstock. Propane is covered by ASTM Specification D1835, Gas Processors Association for commercial and HD-5 propane, and ASTM Specification for special duty propane.

**Propylene.** An olefinic hydrocarbon,  $C_3H_6$ , recovered from refinery and petrochemical processes. It is reported in the "Propane" category.

**Residual Fuel Oil.** Topped crude of refinery operations. "Residual Fuel Oil" includes No. 5 and No. 6 fuel oils as defined in ASTM Specification D 396 and Federal Specification VV-F-815C; Navy Special fuel oil as defined in Military Specification MIL-F-859E including Amendment 2; Bunker C fuel oil. Residual fuel oil is used for the production of electric power, space heating, vessel bunkering, and various industrial purposes. Imports of residual fuel oil include "Imported Crude Oil Burned as Fuel."

**Road Oil.** Any heavy petroleum oil, including residual asphaltic oils, used as a dust palliative and surface treatment of roads and highways. It is generally produced in six grades; from 0, the most liquid, to 5, the most viscous.

**Special Naphthas.** All finished products within the gasoline range that are used as paint thinners, cleaners, and solvents. These products are refined to a specified flash point and have a boiling range of 90° to 220° F. "Special naphthas" includes all commercial hexane and cleaning solvents conforming to ASTM Specifications D1836 and D 484, respectively. Naphthas to be blended or marketed as motor gasoline or aviation gasoline or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded.

**Steam (Purchased).** Steam that is purchased for use by a refinery that was not generated from within the refinery complex.

**Still Gas (Refinery Gas).** Any form or mixture of gas produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are methane, ethane, ethylene, butane, butylene, propane, propylene, etc. Still gas is reported for petrochemical feedstock use and refinery fuel use.

- **Petrochemical Feedstock Use**—Includes all refinery streams which are used by chemical or rubber manufacturing operations for further processing, less the amount of such streams returned to the source refinery. Finished petrochemical products are not included. For example, polyethylene, butadiene, etc. are considered petrochemical products; therefore, only their feedstock equivalents are included.

- **Fuel Use**—All other still gas.

**Strategic Petroleum Reserve (SPR).** Stocks (currently, only crude oil) maintained by the Federal Government for use during periods of major supply interruption.

**Unfinished Oils.** Includes all oils requiring further processing, except those requiring only mechanical blending.

**Unfractionated Stream.** Mixtures of unsegregated natural gas plant liquid components excluding those included in plant condensate. This product is extracted from natural gas.

**Wax.** A solid or semi-solid material derived from petroleum distillates or residues by such treatments as chilling, precipitating with a solvent, or de-oiling. It is a light-colored, more-or-less translucent crystalline mass, slightly greasy to the touch, consisting of a mixture of solid hydrocarbons in which the paraffin series predominates. Includes all marketable wax whether crude scale or fully refined. The three grades reported are microcrystalline, crystalline—fully refined, and crystalline—other. The conversion factor is 280 pounds per 42-gallon barrel.

- **Microcrystalline Wax**—Wax extracted from certain petroleum residues having a finer and less apparent crystalline structure than paraffin wax and having the following physical characteristics:

- Penetration at 77° F. (D-1321)—60 maximum.
  - Viscosity at 210° F. in Saybolt Universal Seconds (SUS)  
(D-88)—60 SUS (10.22 centistokes) minimum to 150  
SUS (31.8 centistokes) maximum.
  - Oil content (D-721)—5 percent minimum.

- **Crystalline-Fully Refined Wax**—A light-colored paraffin wax having the following characteristics:

- Viscosity at 210° F.  
(D-88)—59.9 SUS (10.18 centistokes) maximum.
  - Oil Content (D-721)—0.5 percent maximum.
  - Other +20 color, Saybolt minimum.

- **Crystalline-Other Wax**—A paraffin wax having the following characteristics:

- Viscosity at 210° F. (D-88)—59.9 SUS (10.18 centistokes) maximum.
  - Oil Content (D-721)—0.51 percent minimum to 15 percent maximum.

**Western Hemisphere.** That half of the earth that includes North and South America and the surrounding waters.

# Bureau of Mines Petroleum Refining Districts and PAD Districts

## PAD District

### Refining District

**I** East Coast—District of Columbia and the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida, and the following counties of the State of New York: Cayuga, Tompkins, Chemung and all counties east and north thereof. Also the following counties in the State of Pennsylvania: Bradford, Sullivan, Columbia, Montour, Northumberland, Dauphin, York, and all counties east thereof.

**Appalachian #1**—The State of West Virginia, those parts of the States of Pennsylvania and New York not included in the East Coast District.

**Appalachian #2**—The following counties of the State of Ohio: Erie, Huron, Crawford, Marion, Delaware, Franklin, Pickaway, Ross, Pike, Scioto, and all counties east thereof.

**II** Indiana—Illinois—Kentucky—The States of Indiana, Illinois, Kentucky, Tennessee, Michigan, and that part of the State of Ohio not included in the Appalachian District.

Minnesota—Wisconsin—North and South Dakota—The States of Minnesota, Wisconsin, North Dakota, and South Dakota.

Oklahoma—Kansas—Missouri—The States of Oklahoma, Kansas, Missouri, Nebraska, and Iowa.

Texas Inland—The State of Texas except the Texas Gulf Coast District.

Texas Gulf Coast—The following counties of the State of Texas: Newton, Orange, Jefferson, Jasper, Tyler, Hardin, Liberty, Chambers, Polk, San Jacinto, Montgomery, Harris, Galveston, Waller, Fort Bend, Brazoria, Wharton, Matagorda, Jackson, Victoria, Calhoun, Refugio, Aransas, San Patricio, Nueces, Kleberg, Kenedy, Willacy, and Cameron.

**III** Louisiana Gulf Coast—The following Parishes of the State of Louisiana: Vernon, Rapides, Avoyelles, Pointe Coupee, West Feliciana, East Feliciana, Saint Helena, Tangipahoa, Washington, and all Parishes south thereof. Also the following counties of the State of Mississippi: Pearl River, Stone, George, Hancock, Harrison, and Jackson. Also the following counties of the State of Alabama: Mobile and Baldwin.

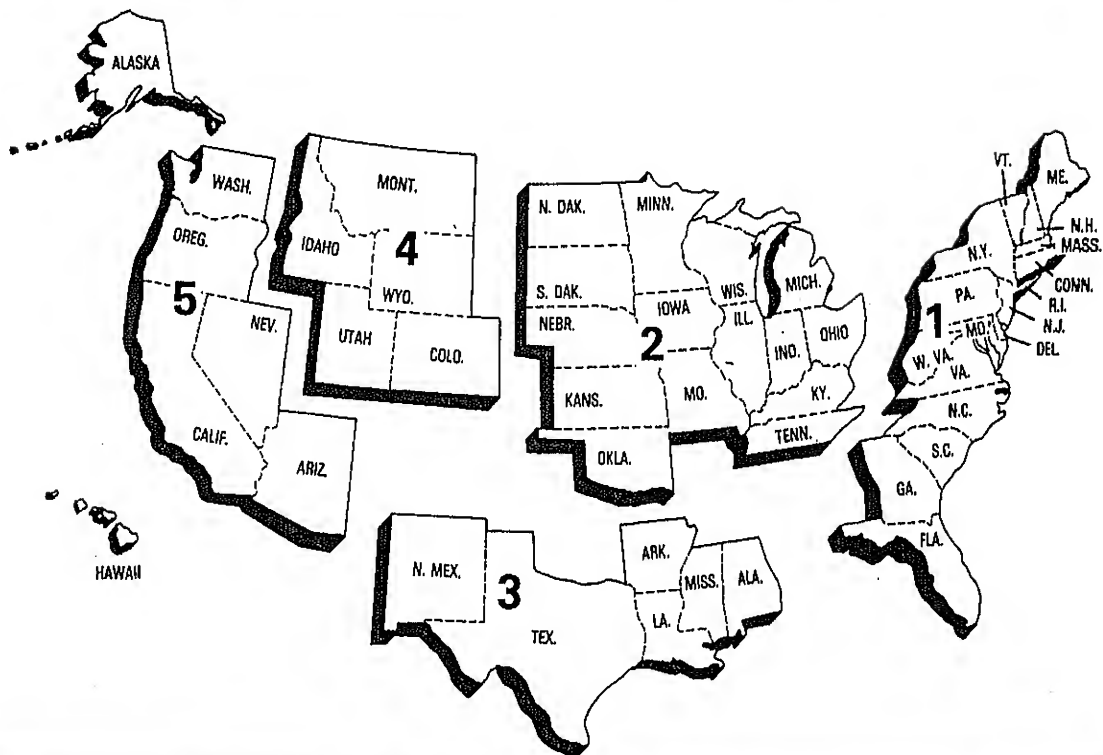
North Louisiana—Arkansas—The State of Arkansas and those parts of the States of Louisiana, Mississippi, and Alabama not included in the Louisiana Gulf Coast District.

New Mexico—The State of New Mexico.

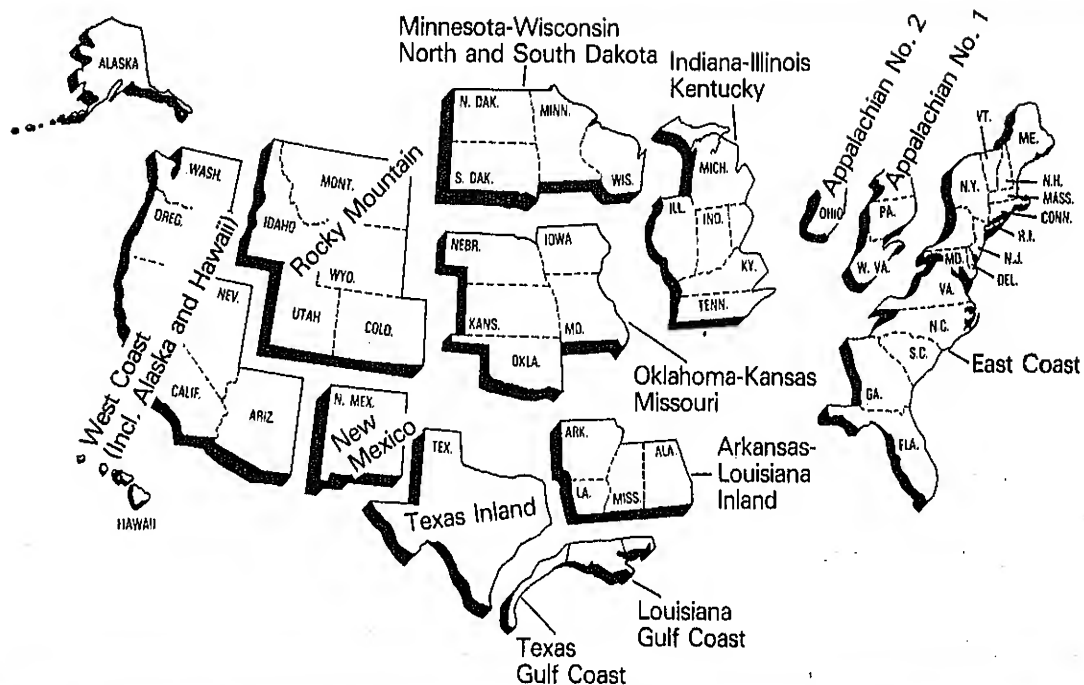
**IV** Rocky Mountain—The States of Montana, Idaho, Wyoming, Utah, and Colorado.

**V** West Coast—The States of Washington, Oregon, California, Nevada, Arizona, Alaska, and Hawaii.

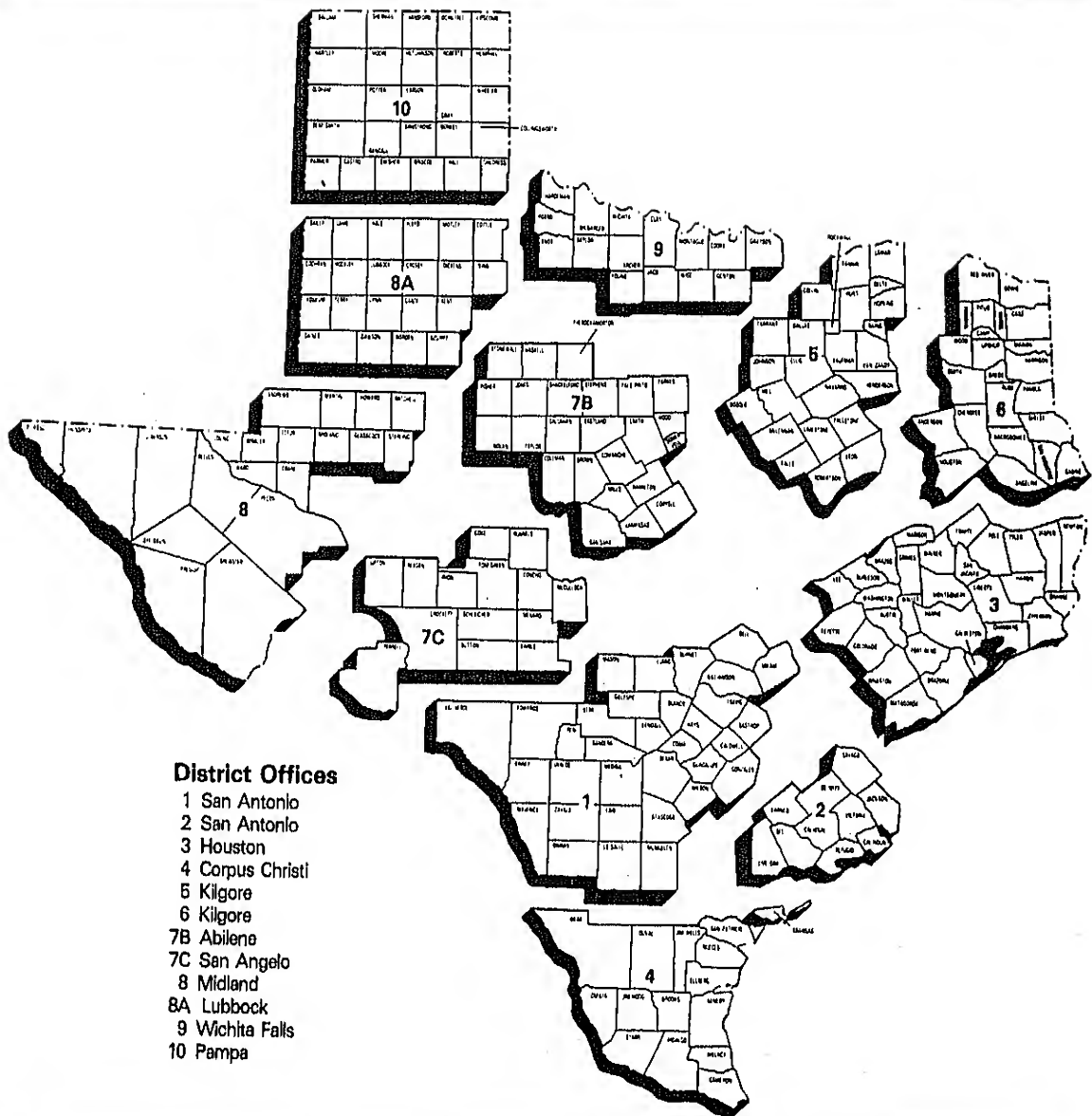
## Petroleum Administration for Defense (PAD) Districts



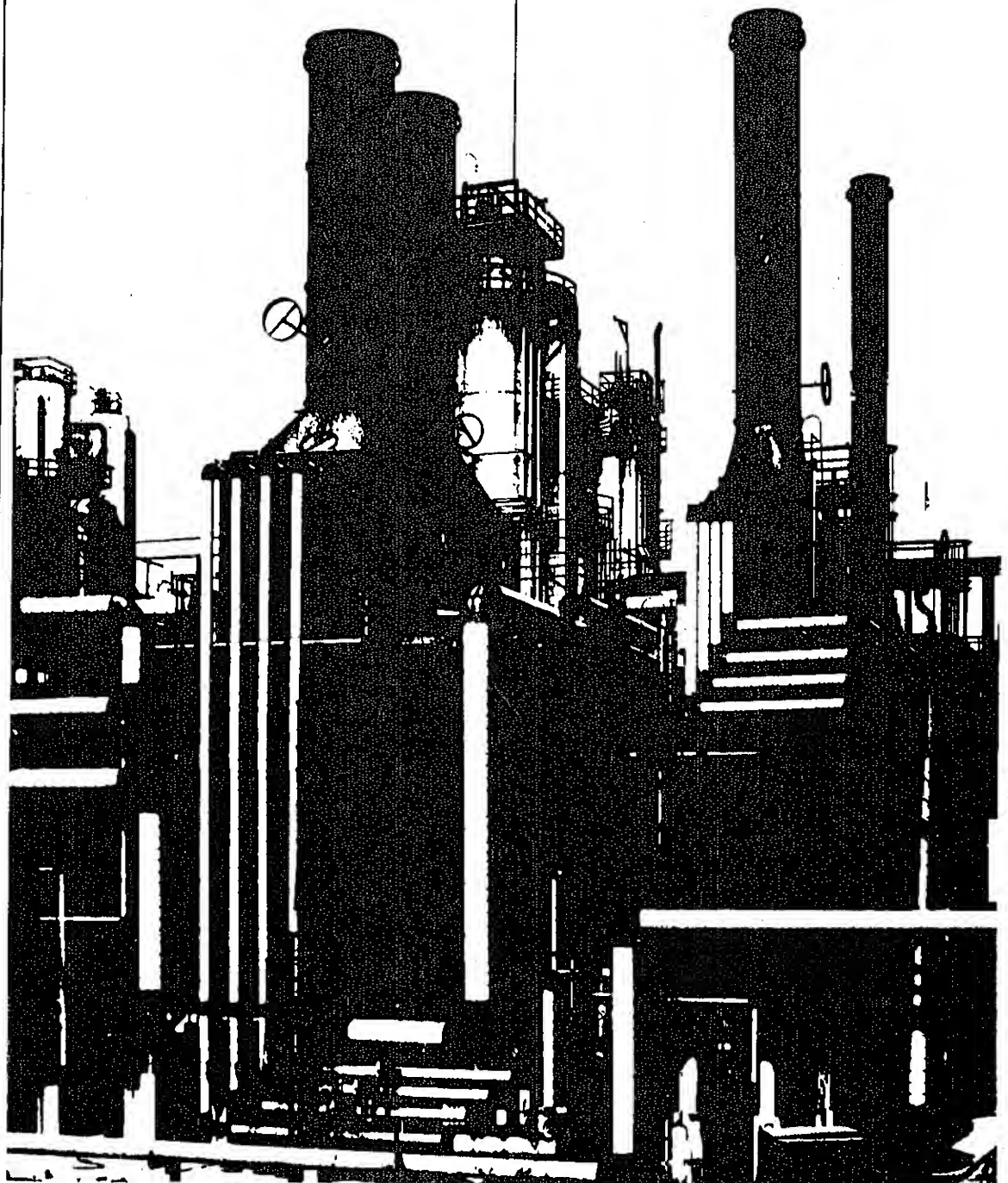
## Bureau of Mines Refining Districts



## District Map Oil and Gas Division Railroad Commission of Texas



# Explanatory Notes



## Explanatory Notes

### Note 1.1 EIA-64: Natural Gas Liquids Operations Report

#### Background

The EIA-64, "Natural Gas Liquids Operations Report" evolved from a survey designed and conducted by the United States Geological Survey beginning in 1911. This form collects data on the production and storage of natural gas plant liquids at natural gas processing plants and fractionators.

#### Description of Survey

##### Universe

The universe includes all operators of facilities designed to: (1) extract liquid hydrocarbons from natural gas streams (natural gas processing plants); (2) separate a combined products liquid hydrocarbon stream into its component products, i.e. propane, butane, natural gasoline, etc. (fractionators); or (3) store the liquid hydrocarbon output of plants and fractionators.

The mailing list is automated. It is maintained by matching periodically with the *LP Gas Almanac* listings (including supplements) and the *Oil and Gas Journal* Processing Plant Survey listings, and by making changes reported by the respondents.

##### Information Collected

The data are submitted monthly by facility and include all products that the company controls through possession, regardless of ownership. The main items of information collected by the EIA-64 are shown by the example of the form presented below.

##### Collection Methods

Completed reports are required to be postmarked 20 days following the last day of the report month. Follow-up telephone calls are made to nonrespondents in order to collect data before publication of the aggregated data.

##### Imputing Missing Data

Imputation is performed only for companies that submitted a report in the previous month. For such companies, previous monthly values are used for current values. The previous month's ending stocks value is used for both the current month's beginning stocks and the current month's ending stocks. The value of shipments is adjusted to balance stock level, production, receipts, plant fuel use, and losses. In the event that the previous month's data were estimated, the respondent is contacted and requested to submit estimates, if necessary, to be followed by a resubmission of actual data.

##### Response Rates

The initial response rate averages 85 percent, with a final response averaging 98 percent as a result of telephone follow-up procedures.

##### Data Processing

Upon receipt, the reports are reviewed for identification section omissions, duplicate submissions, and identification information changes. The data are then entered and edited. The edit program includes checks for invalid data entry codes, range checks for current-month to previous-month changes (absolute and relative), arithmetic calculation errors, line balancing errors, etc. Telephone calls are made to respondents to resolve questions.

### Note 1.2 EIA-87, 88, 89 and 90: Joint Petroleum Reporting System

#### Background

The Joint Petroleum Reporting System (JPRS) comprises four surveys: the "Refinery Report" (EIA-87); the "Bulk Terminal Stocks Report" (EIA-88); the "Pipeline Products Report" (EIA-89); and the

[illegible]



"Crude Oil Stocks Report" (EIA-90). This group of forms collects data on petroleum refinery operations and on storage of crude oil and petroleum products. The origins of JPRS lie in the voluntary petroleum reporting systems instituted by the Bureau of Mines (BOM) soon after it was established as a part of the Department of the Interior in May 1910.

## Description of Survey

### Universe

The respondent universe of each JPRS survey is defined as follows:

**EIA-87:** All petroleum refineries and plants producing finished motor gasoline through the mechanical blending of liquids which are operated or controlled in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Hawaiian Foreign Trade Zone, and Guam.

**EIA-88:** All bulk terminal facilities in the 50 States and the District of Columbia, Puerto Rico, and the Virgin Islands that (a) have total bulk storage capacity of 50,000 barrels or more and/or (b) receive petroleum products by tanker, barge, or pipeline regardless of ownership of the material.

**EIA-89:** All products pipeline companies that carry petroleum products (including interstate, intrastate and intracompany pipelines) in the 50 States and the District of Columbia.

**EIA-90:** Crude oil pipeline companies (gathering and trunk pipeline companies), crude oil producers, terminal operators, storers of crude oil, and companies transporting Alaskan crude oil by water (in excess of 1,000 barrels), regardless of ownership in the 50 States and the District of Columbia.

The list of respondents is kept current by checking for new respondents in the *Oil and Gas Journal* weekly magazine; newspaper articles; the Office of Resource Applications publication "Trends in Refinery Capacity & Utilization;" the Office of Refinery Operations (ERA) list of U.S. Refiners; and the annual survey EIA-177 "Capacity of Petroleum Refineries."

### Information Collected

The main items of information collected by EIA-87, are shown by the example presented below. The EIA-88 and EIA-89 collect data on petroleum product stocks. The EIA-90 collects data on crude oil stocks and crude oil used directly as fuel.

### Collection Methods

The data for the JPRS surveys are collected on a monthly basis. Completed forms are required to be postmarked by the 20th day following the report month. Telephone follow-up calls are made to nonrespondents in order to collect data before publication deadline. An automated mailing list is maintained and is used to monitor receipt of the forms.

### Imputing Missing Data

Imputation is performed only for companies that submitted a report in the previous month. For these companies, the previous monthly values are used for current values. The previous month's ending stocks value is used for both the current month's beginning stocks and the current month's ending stocks. The value of shipments is adjusted to balance stock level, production receipts, and losses. In the event that previous month's data were estimated, the respondent is contacted and requested to submit estimates if necessary, to be followed by a resubmission of actual data.

### Response Rates

As of the filing deadline, the response rate of the JPRS respondents is over 90 percent. All companies that have not responded are contacted by telephone. Although data are taken by telephone to expedite processing, a certified submission is still required. Thirty calendar days after the report month, data for companies that still fail to file the form are estimated based on prior month's data. Names of companies that fail to file for two consecutive months are forwarded to DOE for further noncompliance action. Final response rate is 100 percent.

Report Type: **B 0 1** EIA Company Identification No.: Report Period:  Yr.  Mo. 

SECTION 6. REFINERY STOCKS, RECEIPTS, INPUTS, PRODUCTION, SHIPMENTS AND REFINERY FUEL USE AND LOSSES (Thousands of Barrels of 42 Gallons)								
ITEM DESCRIPTION	PRO- DUCT CODE	STOCKS BEGINNING OF MONTH A	RECEIPTS DURING MONTH B	INPUTS DURING MONTH C	PRODUCTION DURING MONTH D	SHIPMENTS DURING MONTH E	REFINERY FUEL USE AND LOSSES DURING MONTH F	STOCKS END OF MONTH G
Crude oil (incl. lease condensate) Total (sum of codes 010 and 020)	050				X			
Domestic (incl. Alaskan)	010	X		X	X	X	X	X
Foreign	020			X	X	X	X	X
Alaskan	011	X		X	X	X	X	X
Products of natural gas proc. plants:								
Ethane	110				X			
Propane	231				X			
Ethane-propane mixtures	241				X			
Isobutane	233				X			
Normal butane	235				X			
Other butanes	236				X			
Butane - propane mixtures	234				X			
Natural gasoline and isopentane	220				X			
Plant condensate	210				X			
Unfractionated stream	227				X			
Other hydrocarbons and hydrogen	090				X			
Alcohol	091				X			
Unfinished oils	812							
Gasoline:								
Finished leaded, motor	132							
Finished unleaded, motor	133							
Blending components, motor	134							
Gasohol	135							
Finished aviation	111							
Blending components, aviation	112							
Special naphthas (solvents)	061							
Jet fuel:								
Naphtha-type	211							
Kerosene-type	213							
Kerosene (incl. range oil)	311							
Distillate fuel oil, Less No. 4	412							
No. 4 fuel oil	414							
Residual fuel oil	511							
Lubricating oils:								
Bright stock	853							
Neutral	855							
Other	859							
Asphalt	900							
Wax:								
Microcrystalline	061							
Crystalline-fully refined	071							
Crystalline-other	061							
Petroleum coke:								
Marketable	021							
Catalyst	822							
Road oil	031							
Still gas:								
Petrochemical feedstock use	042							
Other use	044							
Ethane and/or ethylene:								
Petrochemical feedstock use	812							
Other use	862							
Propane and/or propylene:								
Petrochemical feedstock use	813							
Other use	863							
Butane and/or butylene:								
Petrochemical feedstock use	814							
Other use	864							
Butane-propane mixtures:								
Petrochemical feedstock use	818							
Other use	868							
Isobutane petrochemical feedstock use	818							
Naphtha—less than 400° and-point Petrochemical feedstock use	822							
Other oils—over 400° and-point Petrochemical feedstock use	824							
Other finished products Non-fuel use	087							
Fuel Use	098							
Overage (inputs) or shortage (production)	911	X	X			X	X	X
TOTAL	999	X	X			X	X	X

## **Note 1.3 EIA-161, 162, 163, 164 and 165: Weekly Petroleum Reporting System**

### **Background**

The Weekly Petroleum Reporting System (WPRS) comprises five surveys: the "Refinery Report" (EIA-161); the "Bulk Terminal Stocks Report" (EIA-162); the "Pipeline Product Stock Report" (EIA-163); the "Crude Oil Stocks Report" (EIA-164); and the "Imports Report" (EIA-165).

The EIA weekly reporting system was designed to collect data similar to those collected under the monthly Joint Petroleum Reporting System (JPRS) (See Note 1.2). In the WPRS, selected petroleum companies report weekly data to EIA on crude oil and petroleum product stocks, refinery inputs and production, and crude oil and petroleum product imports. On the Forms EIA-161 through EIA-164, companies report data on a custody basis. On the Form EIA-165, the importer of record reports each shipment entering the United States. Current weekly data and the most recent monthly data from the JPRS are used to estimate the published weekly totals.

### **Description of Survey**

#### **Universe**

The sample of companies that report weekly in the WPRS was selected from the universe of companies that report monthly in either the JPRS system or the ERA-60 system (for imports). All sampled companies report data only for facilities in the 50 States and the District of Columbia.

The sampling frame for each weekly survey is defined as follows:

**EIA-161:** Uses the EIA-87 universe, which includes all petroleum refineries in the United States and its territories, industrial facilities that have crude oil distillation capacity and produce some refined petroleum products, and bulk terminals that blend motor gasoline.

**EIA-162:** Uses the EIA-88 universe, which includes all bulk terminal facilities in the United States and its territories that have total bulk storage capacity of 50,000 barrels or more, or that receive petroleum products by tanker, barge, or pipeline.

**EIA-163:** Based on the EIA-89 universe, which includes all petroleum product pipeline companies in the United States and its territories that transport refined petroleum products, including interstate, intrastate and intracompany pipeline movements. Pipeline companies that only transport natural gas liquids are not included in the EIA-163 frame. Only those pipeline companies which transport products covered in the weekly survey are included.

**EIA-164:** Uses the EIA-90 universe, which consists of all trunk pipeline companies in the United States and its territories which transport crude oil, all refining companies, all crude oil producers, all terminal operators, and all storers of 1,000 barrels or more of crude oil.

**EIA-165:** Uses the ERA-60 universe, which includes all importers of record of crude oil and petroleum products into the United States and Puerto Rico.

#### **Sampling**

The sampling procedure used for the weekly system is the cut-off method. In the cut-off method, companies are ranked from largest to smallest on the basis of the quantities reported during some previous period. Companies are chosen for the sample beginning with the largest and adding companies until the total sample covers about 90 percent of the total for the previous time period.

#### **Collection Methods**

Data are collected by mail, mailgram, telephone, Telex, and Telefax on a weekly basis. All canvassed firms and terminal operating companies must file by 5:00 p.m. on the Monday following the close of the report period, 7 a.m. Friday. During the processing week, company corrections of the prior week's data are also entered.

## Formula and Calculations

After the company reports have been checked and entered into the weekly data base, ratio estimates of the weekly totals are calculated from the reported data.

First, the current week's data for a given product reported by companies in that region are summed. (Call this weekly sum,  $W_s$ .) Next, the most recent month's data for the product reported by those same companies are summed. (Call this monthly sum,  $M_s$ .) Finally, let  $M_t$  be the sum of the most recent month's data for the product as reported by *all* companies. Then, the current week's ratio estimate for that product for all companies is given by.

$$W_t = \frac{M_t}{M_s} \circ W_s$$

This procedure is used directly to estimate total weekly inputs to refineries and production.

To estimate stocks of finished products, the preceding procedure is followed separately for refineries, bulk terminals, and pipelines. Total estimates are formed by summing over establishment types.

Weekly imports data are highly variable on a company-by-company basis or a week-by-week basis. Under such conditions, the ratio method is known to result in large errors. Hence, a number of other procedures for estimating weekly imports were considered. The average ratio method was selected for estimating imports because it produces estimates that were close to benchmark values computed from monthly data. Estimates are obtained using the ratio method, but with each company in turn omitted from the sample. These estimates are then averaged to obtain the average ratio estimate.

## Imputing Missing Data

The ratio method of estimation automatically imputes for nonresponse. Data from companies that do not respond are excluded from both the weekly and the monthly totals for the sampled companies.

## Response Rates

The response rate as of the day after the filing deadline is about 80 percent for the EIA-161; 75 percent for the EIA-162; 95 percent for the EIA-163; 80 percent for the EIA-164; and greater than 95 percent for the EIA-165. However, more forms are received the next day, bringing the final response rates up. Late respondents are contacted by telephone. Nearly all of the major companies report on time. The nonresponse rate for the published estimates is usually between 2 percent and 5 percent.

# Note 1.4 EIA-170: Tanker and Barge Shipments of Crude Oil and Petroleum Products Between Districts

## Background

The EIA-170 survey collects data for calculation of monthly petroleum supply and disposition figures on U.S. and PAD District levels.

## Instrument and Design

This form is designed to collect data on total movements by tanker and barge of crude oil and petroleum products between PAD Districts or between PAD Districts and the Panama Canal, by shipping State and receiving State.

## Universe

The respondent universe of the EIA-170 consists of all known companies and plants that have custody of crude oil and petroleum products transported by tanker and barge between PAD Districts or between PAD Districts and the Panama Canal. There are currently about 60 respondents.

### **Collection Methods**

Survey data are collected by mail every month. The filing deadline is the 20th calendar day of the month following the report period. The response rate as of the filing deadline is about 98 percent. Late respondents are contacted by telephone. All responses are processed each month before release of the data for publication.

## **Note 1.5 ERA-60: Reports of Oil Imports into the United States and Puerto Rico**

### **Background**

The "Report of Oil Imports into the United States and Puerto Rico" (ERA-60) survey was designed by the Economic Regulatory Administration (ERA) of the Department of Energy to collect data on port of entry, country of origin, destination, and quantity of imported crude oil and petroleum products, as well as sulfur content and API gravity. All licensed importers and importers of record are required to report. The "Shipments of Refined Products from Puerto Rico to the United States" (P-133-M-O) survey was designed to collect data on imports to the United States that are not covered by the ERA-60.

### **Universe**

The monthly submission of Form ERA-60 and P-133-M-O is required by all licensed importers and importers of record into the United States and Puerto Rico. The respondent universe consisted of approximately 750 firms as of June 30, 1981. The respondent universe for these surveys is updated whenever an import license is granted by the Office of Oil Imports of the ERA.

### **Collection Methods**

The survey data are collected by mail each month. It is mandatory for each respondent to file the ERA-60/P-133-M-O by the 15th working day of the month following the reporting period. Resubmissions are received frequently and are processed when received.

### **Response Rates**

In December 1980, the survey had a response rate of 92 percent by the filing deadline. The universe was 640 at that time. (Because this is a dynamic survey, the universe is constantly changing.) Standard followup of nonrespondents is made to insure that all reports are received, since data are not imputed for nonrespondents. Response rate is generally 98-99% by the time the data are first published. Revised publications are not generated as standard operating procedure. The ERA-60 file is never closed; resubmissions are constantly received and processed.

## **Note 1.6 Census Import (IM-145) and Export (EM-522 and EM-594) Tabulations**

The foreign trade statistics program, conducted by the Bureau of the Census, involves compilation and dissemination of a large body of data relating to the imports and exports of the United States.

### **Import Statistics**

#### **Coverage**

The import statistics reflect both government and nongovernment imports of merchandise from foreign countries into the U.S. Customs territory (includes the 50 States, the District of Columbia, and Puerto Rico), without regard to whether or not a commercial transaction is involved. In general, the statistics record the physical movement of merchandise into the United States from foreign countries, with the exception of the following types of transactions that are excluded from the statistics:

1. Merchandise shipped in transit through the United States, when documented with Customs as an intransit movement.
2. Shipments between the United States and Puerto Rico, the Virgin Islands, Guam, American Samoa, and other U.S. possessions; shipments between any of these outlying areas; and imports into U.S. possessions from foreign countries.
3. U.S. merchandise returned by U.S. Armed Forces for their own use.

#### **Source of Import Information**

The official U.S. import statistics are compiled by the Bureau of the Census from copies of the import entry and warehouse withdrawal forms that importers are required by law to file with Customs officials (Customs Forms 7501- 7505).

Imported petroleum is reported as "Imports for Consumption." Imports for consumption are a combination of entries for immediate consumption and withdrawals from warehouses for consumption. With certain exceptions as indicated above, these data generally reflect the total of commodities entered into U.S. consumption channels.

#### **Country and Area of Origin**

The country reported in the statistics as the country of origin is defined as the country where the merchandise was grown, mined, or manufactured. In instances where the country of origin cannot be determined, the transactions are credited to the country of shipment.

### **Export Statistics**

#### **Coverage**

The export statistics reflect both government and nongovernment exports of domestic and foreign merchandise from the U.S. Customs territory (includes the 50 States, the District of Columbia, and Puerto Rico) to foreign countries, without regard to whether or not the exportation involves a commercial transaction. In general, the statistics record the physical movement of merchandise out of the United States to foreign countries, with the exception of the following types of transactions:

1. Shipments between the United States and Puerto Rico, the Virgin Islands, Guam, American Samoa, and other U.S. possessions; between any of these outlying areas; and shipments from U.S. Possessions to foreign countries.
2. Merchandise shipped in transit through the United States from one foreign country to another, when documented as such with U.S. Customs.
3. Bunker fuels and other supplies and equipment for use on departing vessels, planes, or other carriers engaged in foreign trade.

#### **Source of Export Information**

The official U.S. export statistics are compiled by the Bureau of the Census primarily from copies of Shipper's Export Declarations. Shipper's Export Declarations are required to be filed with Customs officials, except when qualified exporters have been authorized to submit data in the form of magnetic tape, punched cards, or monthly Shipper's Summary Export Declarations directly to the Bureau of the Census.

#### **Country and Area of Destination**

The country of destination is defined as the country of ultimate destination or the country where the goods are to be consumed, further processed, or manufactured, as known to the shipper at the time of exportation. If the shipper does not know the country of ultimate destination, the shipment is credited to the last country to which the shipper knows that the merchandise will be shipped in the same form as it was when exported.

## Note 2 Estimation

The geographic coverage of all estimates is the 50 United States and the District of Columbia, including adjacent areas of the outer continental shelf, excluding the Hawaiian Foreign Trade Zone.

### Note 2.1 Supply

The components of petroleum supply are field production, refinery production, imports, stock withdrawal or addition, crude oil used directly, and losses.

**Field Production** is the sum of crude oil (including lease condensate) production, natural gas processing plant production, and new supply (field production) of other liquids used by refineries.

Crude oil production is estimated based on data received from State conservation and revenue agencies. Reports of crude oil production from each of the 31 producing States are not received until several months after the other components of petroleum supply described in Explanatory Note 2.1 are available for publication. For an explanation of the crude oil estimation procedure used until the State reports are complete, see Explanatory Note 2.2.

Field production of natural gas plant liquids (NGPL), including finished petroleum products, is reported monthly on survey Form EIA-64, "Natural Gas Liquids Operation Report." Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month. For survey description and other detail, see Explanatory Note 1.1.

Field production of natural gas plant liquids (NGPL), including finished petroleum products, is reported monthly on survey Form EIA-64, "Natural Gas Liquids Operations Report." Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month. For survey description and other detail, see Explanatory Note 1.1.

**Refinery Production** of LRGs, ethane, and finished petroleum products is reported monthly on survey Form EIA-87, "Refinery Report." Published production of these products equals refinery production minus refinery input. Refinery production of unfinished oils and of motor and aviation gasoline blending components appears on a net basis under refinery input. Negative production will occur when the amount of a product produced during the month is less than the amount of that same product that is reprocessed (input) or reclassified to become another product during the same month.

Refinery production is also reported weekly on survey Form EIA-161, "Refinery Report." See Explanatory Notes 1.2 and 1.3 for survey descriptions and other detail. It should also be noted that refineries do not report production of crude oil, natural gasoline, isopentane, unfractionated stream, plant condensate, or other hydrocarbons and alcohol.

**Imports** of crude oil and petroleum products are reported monthly on Form ERA-60, "Report of Oil Imports into the United States and Puerto Rico," and Form P-133-M-O, "Shipments of Refined Products (including unfinished oils) from Puerto Rico to the United States." In addition, the Census Bureau Tabulation IM-145 summarizes import data from Customs import declarations reported on Customs Forms 7501 and 7505. The most prominent difference between the EIA and Census systems appears in imports of liquefied petroleum gases (LPG), where Census data show a much higher level of imports than Energy Information Administration data. This occurs because the ERA-60 respondent frame was built by monitoring importers of licensed products and because LPGs are not licensed products. Therefore, respondents that only import LPGs have not been identified, and do not report these imports to the Department of Energy. Since these importers are required to file form 7501 with the U.S. Customs Service, EIA obtains data on imports of LPGs from Census Tabulation IM-145. Additional data taken from the IM-145 are relatively small quantities of naphtha and kerosene-type jet fuels, distillate fuel oils, and residual fuel oils withdrawn from bonded storage for use in international trade and for military offshore use. Even though these duty-free fuels are stored on United States shores, they did not enter the United States for domestic consumption and therefore are not included in the ERA-60 reporting system.

Imports are also reported weekly on survey Form EIA-165, "Imports Report." See Explanatory Notes 1.3, 1.5, and 1.6 for survey descriptions and other detail.

**Stock Withdrawal (+) or Addition (-)** is calculated by subtracting stocks at the end of the month from stocks at the beginning of the month. (Note: The beginning stocks of one month are equal to the ending stocks of the previous month.) A positive result (+) would represent a withdrawal from stocks and an increase in petroleum supplies distributed for domestic consumption. A negative result (-) would represent a buildup of stocks and reduce petroleum supplies distributed for domestic consumption. For survey forms used to make stock withdrawal or addition calculations see Explanatory Note 2.4.

**Unaccounted-for Crude Oil** is a balancing item that represents the difference between crude oil supply and disposition. Crude oil supply is the sum of field production, imports and stock withdrawal or addition, less crude used directly and losses. Crude oil disposition is the sum of exports and refinery input.

Unaccounted-for crude oil is calculated by subtracting crude oil supplies from crude oil disposition. A negative result indicates that refiners and exporters reported use of more crude oil than was reported to have been available to them. (This occurs, for example, when imports are undercounted due to late reporting or other problems.) A negative result would indicate that more crude oil was reported to have been supplied to refiners and exporters than they reported used. This calculation is performed for crude oil to ensure that product supplied for crude oil is always zero.

**Crude Oil Used Directly and Losses** is the sum of crude oil losses at refineries, crude oil burned at refineries, and crude oil burned on leases. Crude oil losses and consumption at refineries are reported on Form EIA-87, "Refinery Report." Crude oil burned on leases is reported on Form EIA-90, "Crude Oil Stocks Report." Crude oil burned on leases is divided into two categories: crude burned as residual fuel oil and crude burned as distillate fuel oil. Crude burned on leases appears as a negative supply to crude oil (a reduction in crude oil supplies) and as a positive supply to residual and distillate fuel oil (an increase to these supplies).

## Note 2.2: Domestic Crude Oil Production

Data for the Crude Oil Production System (COPS) are reported to the Department of Energy by each of the individual State conservation agencies, which collect crude oil production values for tax purposes. In addition, the U.S. Geological Survey reports the volume of crude oil that is produced offshore in Federally-owned waters. With the exception of six State conservation agencies, all of these reports are received monthly. After each calendar year, these monthly numbers are updated using the annual reports from the State conservation agencies and the U.S. Geological Survey. The six States that do not report monthly values are Indiana, New York, Ohio, Pennsylvania, West Virginia, and Wyoming. Monthly values are estimated for these States using the individual linear trends of their historical annual crude oil production values.

There is a time lag of approximately 3 to 4 months between the end of the reporting month and the time when the actual values are available for this publication. In order to provide more timely crude oil production estimates, the Department of Energy has established a series of statistical models that forecast the volume of crude oil production based on the historical production patterns. The models use Auto Regressive Integrated Moving Average (ARIMA) to analyze series of monthly crude oil production values collected over several years.

In order to provide detailed crude oil production information on both the PAD District level and for the major producing States, the total United States crude oil production volume was separated into nine distinct groupings. The nine different time series are the monthly reported crude oil production volumes for: (1) all the States in PAD District 1; (2) all the states in PAD District 2; (3) Texas; (4) Louisiana; (5) the States in PAD District 3 excluding Texas and Louisiana; (6) all the States in PAD District 4; (7) Alaska; (8) California; and (9) the States in PAD District 5 excluding Alaska and California. Monthly data collected beginning in January 1973 are used for each of these time series.



A separate ARIMA model is identified for each time series. New model parameters are estimated monthly for each of these nine updated time series. Then, these ARIMA models are used to forecast crude oil production volumes for the month of interest. These values are then aggregated into PAD District and national totals. The forecasts made during 1981 had an average error of less than 0.6 percent compared to the monthly crude oil production volumes eventually reported by the States.

## Note 2.3 Disposition

The components of petroleum disposition are refinery input, exports, and products supplied for domestic consumption.

**Refinery Inputs** of crude oil, NGPL and other liquids are reported monthly on survey Form EIA-87, "Refinery Report." Published inputs of unfinished oils, and motor and aviation gasoline blending components, equal refinery input minus refinery output. Refinery inputs of finished petroleum products are reported on a net basis under refinery production. Refinery inputs are also reported weekly on survey Form EIA-161, "Refinery Report." See Explanatory Notes 1.2 and 1.3 for survey description and other details.

**Exports** of crude oil and petroleum products are compiled from Census Bureau tabulations EM522 and EM594. Exports include crude oil shipments to Puerto Rico, the Virgin Islands, and the Hawaiian Foreign Trade Zone, which are obtained from refinery receipts reported on Form EIA-87.

**Product supplied** for each product is calculated by summing field production plus refinery production, plus imports, plus stock withdrawal or minus stock addition, plus crude oil used directly and losses (plus net receipts when calculated on a PAD District basis), minus refinery input, minus exports. This formula ensures that total disposition equals total supply. Products supplied indicates those quantities of petroleum products supplied for domestic consumption. Occasionally, the result for a product is negative when total disposition of that product exceeds total supply. Negative product supplied may occur for a number of reasons: (1) product reclassification has not been reported, (2) misreporting or delayed reporting of data, and (3) for calculations on a PAD District basis, incomplete coverage of interdistrict movements data compiled to calculate net receipts.

## Note 2.4 Stocks

Primary stocks of crude oil are the sum of ending stocks reported monthly on Form EIA-87, "Refinery Report," and Form EIA-90, "Crude Oil Stocks Report." Crude oil held in the Strategic Petroleum Reserve is included unless otherwise noted. Alaskan crude oil in transit is also included. Stocks of crude oil are also reported weekly on Form 161, "Refinery Report," and Form EIA-164, "Crude Oil Stocks Report." Primary stocks of petroleum products are summed from data reported on the Form EIA-64, "Natural Gas Liquids Operations Report," Form EIA-87, "Refinery Report," Form EIA-88, "Bulk Terminal Stocks Report," and Form EIA-89, "Pipeline Products Stocks Report." Primary stocks of petroleum products do not include secondary stocks held by dealers and jobbers, or stocks held by consumers. Petroleum product stocks are also reported weekly on Form EIA-161, "Refinery Report," Form EIA-162, "Bulk Terminal Stocks Report," and Form EIA-163, "Pipeline Products Stocks Report." For survey descriptions and other details see Explanatory Notes 1.1, 1.2, and 1.3.

## Note 2.5 Average Stock Levels

Levels of petroleum products, crude oil, motor gasoline, distillate petroleum gases and ethane, and other products provide the user with data from the most recent 3 year period from January through December. This summary takes the form of an "average range" that includes data from a longer time period. The average range represents the historical

These curves are updated every 6 months effective January 1 or July 1 by basing the "average ranges" on a more recent time period. At that time, each 3-year data series will be adjusted by dropping the first 6 months and including the most recent 6 months.

For each data series, the monthly seasonal factors were estimated by means of a seasonal adjustment technique developed at the Bureau of Census (Census X-11). The seasonal factors were assumed to be stable (i.e., unchanging from year to year) and additive (i.e., the series is deseasonalized by subtracting the seasonal factor for the appropriate month from the reported stock levels). The intent of deseasonalization is to remove only seasonal variation from the data. Thus, a deseasonalized series would contain the same trends and irregularities as the original data. For crude oil stocks, the derived seasonal factors were very small relative to crude oil stock levels. Therefore, the seasonal factors for crude oil stock levels were set to zero. The seasonal factors for total petroleum (crude and products), distillate fuel oil, residual fuel oil, liquefied petroleum gases and ethane, and other products were derived using monthly data from 1974-1980. For motor gasoline, the seasonal factors were based on monthly data from 1975, 1976, 1978, 1979 and 1980. In 1977, there was virtually no seasonal behavior in motor gasoline stocks. Monthly stock levels stayed at the same high level for the entire year. In addition, the seasonal patterns in 1973 and 1974 appeared to be different from those in recent years. It was therefore assumed that the seasonal patterns in 1973, 1974, and 1977 were not representative of the recent past, and these years were not used in the determination of seasonal patterns for motor gasoline stocks. Because of these differences in the year-to-year seasonal fluctuation of motor gasoline, the evidence for the illustrated seasonal patterns for total petroleum (crude and products), crude oil, distillate fuel oil, residual fuel oil, liquefied petroleum gases and ethane, and other products is stronger than is the evidence for the illustrated seasonal patterns for motor gasoline.

In some cases, these seasonal patterns do not show a smooth transition from month to month. For example, the June factor for residual fuel oil is slightly less than the May and July values, making a bump in the curve. As there is little difference in the magnitude of these seasonal factors, it is possible that this variation is due to the small number of observations (7 years) and the data variability.

After seasonal factors are derived, the most recent 3 year period (from January through December or from July through June) is deseasonalized. The average of the deseasonalized 36-month series determines the midpoint of the deseasonalized average band. The standard error of the deseasonalized 36 months is calculated adjusting for extreme data points. The width of the "average range" is twice this standard error.

The upper curve of the "average range" is defined as the average plus the seasonal factors plus the standard error. The lower curve is defined as the average plus the seasonal factors minus the standard error.

## Note 2.6 Movements

Movements of crude oil between PAD Districts are reported on Form EIA-170, "Tanker and Barge Report." Petroleum product movements are reported on Forms EIA-170 and EIA-89, "Pipeline Products Report." Net receipts are calculated by summing total movements into and total movements from each PAD District by pipelines, tankers, and barges, and subtracting for the difference. Movements of crude oil by pipeline are not reported. For survey descriptions and other detail, see Explanatory Notes 1.2 and 1.4.

## Note 2.7 Preliminary Monthly Statistics

Data from the Weekly Petroleum Reporting System (Forms EIA-161, 162, 163, 164 and 165) are used to estimate the most recent monthly values for the historical statistics. Since some of the weekly reporting periods overlap 2 adjacent months, it is necessary to use weighting factors in the calculation of the monthly values.

To calculate monthly estimates of crude oil and petroleum product imports, crude oil input to refineries, and production of petroleum products for a specific month, the weekly estimates are weighted by the number of days of that month included in each week, then summed.

End-of-month stock levels of crude oil and the major products (motor gasoline, distillate fuel and residual fuel) are calculated in a similar manner, but use only the two weekly reporting periods that cover the end-of-week stocks before and after the end of the month. The end-of-month stock level is calculated by first calculating the stock change between the 2 weeks. The daily stock change between the two end-of-week stock levels is then calculated. This number is multiplied by the weighting factor of earlier of the 2 weeks (the week that covers the last day of the month of interest). This change is added to the earlier of the two end-of-week stock levels to estimate the end-of-month stock level.

Preliminary monthly estimates of domestic crude oil production are calculated as described in Explanatory Note 2.2.

### Note 3 Accuracy of Petroleum Supply Data

Early in 1981, the Energy Information Administration completed an assessment of the accuracy of principal petroleum supply data series. <sup>1</sup>This assessment concentrated on two methods of analysis:

- Comparisons between EIA's final annual estimates published in the *Petroleum Statement Annual (PSA)* and annual estimates from independent sources.
- Comparisons between EIA's final monthly estimates published in the *PSA* and EIA's earlier estimates published in the *Monthly Petroleum Statistics Report* and the *Petroleum Statement, Monthly* (predecessor of the *Monthly Petroleum Statement*).

Selected excerpts from these comparisons are presented below.

#### Comparisons of Annual Estimates

All of the systems that provide data for the *Petroleum Supply Monthly*, except for the weekly systems, try to collect data from the entire universe of their potential respondents. They do not sample, and have no sampling errors. Inaccuracies in the data still occur because of problems such as incomplete lists of respondents, errors in the responses, and conceptual errors in the design of the data systems. Such inaccuracies are hard to identify and even harder to quantify. Some understanding of the overall accuracy of the estimates can be achieved by comparing estimates derived from independent sources of data, as shown in the following tables. Close agreements among annual estimates from several independent sources support the conclusion that the estimates are accurate, and accuracy in the annual estimates implies accuracy in the monthly estimates that comprise the annual estimates.

#### Crude Oil Production

Comparisons among independent estimates of annual crude oil and lease condensate production lead to the conclusion that the *PSA* estimates are probably accurate to within 1 percent.

#### Crude Oil Imports

Comparisons among independent estimates of annual crude oil imports lead to the conclusion that the *PSA* estimates are probably accurate to within 1 percent. This conclusion is supported by a study of EIA and Customs/Census import data performed for EIA.<sup>2</sup>

#### Motor Gasoline Supplied

Comparisons among independent estimates of the annual volume of motor gasoline supplied for domestic use show that differences in the estimates grew between 1977 and 1979. By 1979, the EIA estimate of sales by refiners and the Environmental Protection Agency's estimate of production had grown about 5-7 percent larger than the comparable *PSA*, Lundberg, and American Petroleum Institute (API) estimates. Research conducted by EIA in 1979 and 1980<sup>3</sup> confirmed that the lower

<sup>1</sup>An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration, DOE/EIA-0292, June 1981.

<sup>2</sup>Maxima Corporation, *Petroleum Imports Reporting Systems, Preliminary Draft*, (Silver Spring, Maryland: February 1980). Prepared for the Office of Energy Information Validation, Energy Information Administration, U.S. Department of Energy, Washington, D.C.

<sup>3</sup>Office of Energy Information Validation, *Energy Information Administration, U.S. Department of Energy, An Evaluation of Published EIA Gasoline Supply Estimates* (Washington, D.C.: April 1980).

estimates were inaccurate, and identified changes in the petroleum industry that had an adverse effect on the *PSA* estimate. During 1980, EIA developed and tested improved procedures for collecting petroleum supply data, and implemented them in January 1981. (See Explanatory Note 4.)

### Distillate Fuel Oil Supplied

Comparisons among independent estimates of the annual volume of distillate fuel oil supplied for domestic use lead to the conclusion that the *PSA* estimates are probably accurate to within 1 to 2 percent.

### Residual Fuel Oil Supplied

Comparisons among independent estimates of the annual volume of residual fuel oil supplied for domestic use seem to show sizable and consistent differences between the EIA estimates of sales by refiners and the *PSA* and API estimates. When imports of residual fuel oil by nonrefiners are added to the refiner sales, however, the difference between refiner sales and the *PSA* estimates are narrowed to within 1 percent. The comparisons therefore lead to the conclusion that the *PSA* estimates are probably accurate to within 1 to 2 percent.

### Comparison of Estimates of the Volume of Crude Oil and Lease Condensate Production, 1977-1979

	Estimated Volume of Production in Millions of 42-U.S. Gallon Barrels <sup>a</sup>			Comparative Estimate as a Percent of the <i>PSA</i> Estimate		
	1979	1978	1977	1979	1978	1977
EIA Estimate from Petroleum Statement Annual <sup>b</sup>	3,121	3,178	3,009	///	///	///
Comparative Estimates						
American Petroleum Institute Estimate from API Monthly Statistical Report <sup>c</sup>	3,130	3,214	3,021	100.3%	101.1%	100.4%
Census Estimate from the Annual Survey of Oil and Gas <sup>d</sup>	—	3,148	3,016	—	99.1%	100.2%
Oil and Gas Journal Estimates <sup>e</sup> of Total Production derived from Monthly Data	3,168	3,165	3,005	101.5%	99.6%	99.9%
EIA Estimate from Annual Survey of Oil and Gas Reserves (EIA-23) <sup>f</sup>	3,102	3,144	3,001	99.4%	98.9%	99.7%

/// = Not applicable

— = Not available

<sup>a</sup>Volumes are rounded to the nearest million barrels.

<sup>b</sup>From Table 6 in EIA's *Petroleum Statement Annual*, 1977, 1978, 1979.

<sup>c</sup>From issues of the American Petroleum Institute's *Monthly Statistical Report*. The annual values were obtained by summing the monthly values for each of the twelve-month periods.

<sup>d</sup>From Table 1, p.2 of the Bureau of Census' *Annual Survey of Oil and Gas*, 1978.

<sup>e</sup>From issues of the *Oil and Gas Journal*. Monthly estimates are in thousands of barrels per day. They are converted to millions of barrels by dividing by 1,000 and multiplying by the number of days in the reporting period.

<sup>f</sup>From EIA's *U.S. Crude Oil and Natural Gas Reserves 1979 Annual Report* (Table 19, p. 33), *1978 Annual Report* (Table 16, p. 20), and *1977 Annual Report* (Table 22, p.36).

Geographic coverage: the 50 United States and District of Columbia with adjacent areas of the Outer Continental shelf.

SOURCE: *An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration*, DOE/EIA-0292.

# Comparison of Estimates of the Volume of Crude Oil Imports, 1977-1979

	Volume of Millions of 42-U.S. Gallon Barrels <sup>a</sup>			Comparative Estimates as a Percent of the Primary Estimate		
	1979	1978	1977	1979	1978	1977
EIA Estimate of Receipts at Ports of Entry (ERA-60) from <i>Petroleum Statement, Annual</i> <sup>b</sup>	2,380	2,320	2,414	///	///	///
<u>Comparative Estimates</u>						
American Petroleum Institute Estimate of Receipts as Reported by Refiners <sup>c</sup>	2,346	2,323	2,360	98.6%	100.1%	97.8%
Customs/Census Estimate of Receipts at Ports of Entry (Customs Forms 7501 and 7502) <sup>d</sup>	2,415	2,338	2,431	101.5%	100.8%	100.7%
EIA Estimate of Inputs of Foreign Crude at Refineries (ETA-87) <sup>e</sup>	2,364	2,334	2,431	99.3%	100.6%	100.7%

/// = Not applicable

<sup>a</sup>Volumes are rounded to the nearest million barrels.

<sup>b</sup>From Table 1 in EIA's *Petroleum Statement Annual* 1977, 1978, 1979. This table also includes imports for the Strategic Petroleum Reserve (SPR) which were 7.5 million in 1977, 58.8 million in 1978, and 24.4 million in 1979.

<sup>c</sup>Estimate equals the sum of the annual estimate of imports derived from API's *Monthly Statistics Report* (which excludes imports for SPR), and the EIA estimates for imports for the SPR which are listed in footnote b above. The annual estimates from API data are equal to the sum of the API monthly estimates weighted by the number of days in each month.

<sup>d</sup>Data on imports to Puerto Rico which are included in the source for these estimates have been excluded from these estimates in keeping with the geographic coverage of the table. Data are from computer printouts of the Bureau of Census Report IM-245-X dated April 3, 1980 (1977 and 1978 data) and December 19, 1980 (1979 data).

<sup>e</sup>Estimate equals refinery inputs of foreign crude plus (minus) stock increases (decreases) of foreign crude. The data for the computation are published in EIA's *Petroleum Statement, Annuals*. The stock changes (all increases) are derived from data on stocks of crude oil at refineries, bulk terminals, and pipelines as reported on Form EIA-90, plus the increase in the SPR. This estimate excludes crude oil imported and not used as refinery input.

Geographic coverage: the 50 United States and the District of Columbia.

SOURCE: *An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration*, DOE/EIA-0292.

**Comparison of Estimates of the Volume of Motor Gasoline Supplied for Domestic Use, 1977-1979**

	Volume in Millions of 42-U.S. Gallon Barrels <sup>a</sup>			Volume Supplied as a Percent of the PSA Estimate		
	1979	1978	1977	1979	1978	1977
EIA Estimate from <i>Petroleum Statement, Annual</i> <sup>b</sup>	2,573	2,711	2,625	///	///	///
<u>Comparative Estimates</u>						
EIA Estimate of Sales by Refiners (P-306) <sup>c</sup>	2,708	2,792	2,671	105.2%	103.0%	101.8%
Environmental Protection Agency Estimate derived from Production Data <sup>d</sup>	2,766	2,851	2,706	107.5%	105.2%	103.1%
Lundberg Surveys, Inc. Estimate of U.S. Motor Gasoline Sales <sup>e</sup>	2,631	2,746	2,656	102.3%	101.3%	101.2%
American Petroleum Institute Estimate of Deliveries <sup>f</sup>	2,579	2,697	2,612	100.2%	99.5%	99.5%

/// = Not applicable

<sup>a</sup>Volumes are rounded to the nearest million 42-U.S. gallon barrels.

<sup>b</sup>Derived from Table 2 in EIA's *Petroleum Statement Annual*, 1977, 1978, 1979.

<sup>c</sup>Derived from Table 1 of EIA's December issue of *Petroleum Market Shares, Report on Sales of Refined Petroleum Products* 1977, 1978, 1979.

<sup>d</sup>The estimate shown is derived by substituting EIA Domestic Production values with values of domestic production tabulated from the Environmental Protection Agency Bq. Form 3520-2, "Lead Additive Report for Refineries." The EPA production estimates are 2,694 million barrels in 1977, 2,757 in 1978, and 2,648 in 1979 as compared from a summary sheet provided by Mr. Bob Summerhayes of EPA.

<sup>e</sup>From the mid-June issues of the "National Petroleum News," 1979 and 1980.

<sup>f</sup>API publishes monthly estimates in thousands of barrels per month of the volume of motor gasoline delivered from primary storage. The initial published monthly estimate is derived from API sources, but in later API publications the estimates are revised using EIA data. The values shown in the table are equal to the sums of the initial published API monthly estimates of motor gasoline multiplied by the number of days per month.

Geographic coverage: the 50 United States and the District of Columbia.

SOURCE: *An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration*, DOE/EIA-0292.

**Comparison of Estimates of the Volume of Distillate Fuel Oil (Including Kerosene) Supplied for Domestic Use, 1977-1979**

	Volume in Millions of 42-U.S. Gallon Barrels <sup>a</sup>			Volume Supplied as a Percent of the PSA Estimate		
	1979	1978	1977	1979	1978	1977
EIA Estimate from <i>Petroleum Statement Annual</i> <sup>b</sup>	1,269	1,307	1,275	///	///	///
<u>Comparative Estimates</u>						
EIA Estimate of Sales by Refiners (P-306) <sup>c</sup>	1,282	1,275	1,242	101.0%	97.6%	97.4%
American Petroleum Institute Estimate of Deliveries <sup>d</sup>	1,291	1,300	1,277	101.7%	99.5%	100.2%

/// = Not applicable

<sup>a</sup>Volumes are rounded to the nearest million 42-U.S. gallon barrels.

<sup>b</sup>Derived from Table 2 in EIA's "Petroleum Statement Annual", 1977, 1978, 1979.

<sup>c</sup>Derived from Table 1 of EIA's December issue of *Petroleum Market Shares, Report on Sales of Refined Petroleum Products*, 1977, 1978, 1979.

<sup>d</sup>API publishes monthly estimates in thousands of barrels per month of the volume of distillate and kerosene delivered from primary storage. The initial published monthly estimate is derived from API sources, but in later API publications the estimates are revised using EIA data. The values shown in the table are equal to the sums of the initial published API monthly estimates of distillate and kerosene multiplied by the number of days per month.

Geographic coverage: the 50 United States and the District of Columbia.

SOURCE: *An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration*, DOE/EIA-0292.

Comparison of Estimates of the Volume of Residual Fuel Oil Supplied for Domestic Use, 1977-1979.

	Volume in Millions of 42-U.S. Gallon Barrels <sup>a</sup>			Volume Supplied as a Percent of the PSA Estimates		
	1979	1978	1977	1979	1978	1977
EIA Estimate from <i>Petroleum Statement, Annual</i> <sup>b</sup>	1,024	1,095	1,109	///	///	///
<u>Comparative Estimates</u>						
EIA Estimate of Sales by Refiners (P-306) <sup>c</sup>	796	832	847	80.8%	79.6%	80.1%
American Petroleum Institute Estimate of Deliveries <sup>d</sup>	1,044	1,101	1,114	102.0%	100.5%	100.4%

/// = Not Applicable

<sup>a</sup>Volumes are rounded to the nearest million 42-U.S. gallon barrels.

<sup>b</sup>Derived From Table 2 in EIA's *Petroleum Statement Annual*, 1977, 1978, 1979. Refinery fuel use, subtracted from the figures in the source referenced below, has been reinstated in these estimates.

<sup>c</sup>Derived from Table 1 of EIA's December issue of *Petroleum Market Shares, Report on Sales of Refined Petroleum Products*, 1977, 1978, 1979.

<sup>d</sup>API publishes monthly estimates in thousands of barrels per month of the volume of residual fuel oil delivered from primary storage. The initial published monthly estimate is derived from API sources, but in later API publications the estimates are revised using EIA data. The values shown in the table are equal to the sums of the initial published API monthly estimates of residual fuel oil multiplied by the number of days per month.

Geographic Coverage: the 50 United States and the District of Columbia.

SOURCE: *An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration*, DOE/EIA-0292.

## Comparisons of Monthly Estimates Over Time

Inaccuracies in petroleum data resulting from incomplete or delayed reports from respondents and from data processing errors are usually eliminated from the final PSA estimates. Such inaccuracies can still have important effects on the monthly estimates published in the *Petroleum Supply Monthly* and its predecessors. The following tables compare the initial monthly estimates published in the *Monthly Petroleum Statistics Report* and the *Petroleum Statement, Monthly* with the final monthly estimates published in the PSA. During 1977-1979, the *Monthly Petroleum Statistics Report* was published about 60 days after the end of the reporting month, and the *Petroleum Statement, Monthly* was published about 120-150 days after the end of the reporting month. The tables show that, both in terms of bias and in terms of standard deviation, the later estimates are consistently more accurate than the earlier estimates. In spite of this, the earlier estimates may have been more valuable to users of energy information because of the large difference in timeliness.

For purposes of comparison, the *Petroleum Supply Monthly* is scheduled to be published on about the same time lag as the *Monthly Petroleum Statistics Report*. Caution should be exercised, however, in drawing conclusions from this similarity. The *Petroleum Supply Monthly* uses improved data processing procedures developed and successfully implemented during 1981. In addition, since 1979, EIA has greatly improved the accuracy of its 60-day crude oil production estimates and is making progress in improving the accuracy of its 60-day import estimates.

**Initial Monthly Estimates of Production, Stocks, and Imports of Crude Oil As A Percent of EIA's Final Published Estimates <sup>a</sup>  
January 1977 - December 1979**

	Production During Month		Primary Stocks At End of Month		Imports During Month	
	Mean Percent	Standard Deviation	Mean Percent	Standard Deviation	Mean Percent	Standard Deviation
EIA's Estimates from the <i>Monthly Petroleum Statistics Report</i> <sup>b</sup>	# 98.7%	1.6%	# 98.3%	1.4%	# 95.4%	2.4%
EIA's Estimates from the <i>Petroleum Statement, Monthly</i> <sup>c</sup>	# 99.6%	0.6%	100.0%	0.1%	# 98.4%	1.3%

**Initial Monthly Estimates of Products Supplied for Domestic Use as A Percent of EIA's Final Published Estimates <sup>a</sup>  
January 1977 - December 1979**

	Motor Gasoline		Distillate Fuel Oil		Residual Fuel Oil	
	Mean Percent	Standard Deviation	Mean Percent	Standard Deviation	Mean Percent	Standard Deviation
EIA's Estimates from the <i>Monthly Petroleum Statistics Report</i> <sup>b</sup>	99.9%	1.3%	99.9%	2.3%	# 97.9%	2.7%
EIA's Estimates from the <i>Petroleum Statement, Monthly</i> <sup>c</sup>	100.0%	0.3%	99.7%	0.5%	99.4%	1.2%

**Initial Monthly Estimates of End-of-Month Primary Stocks As a Percent of EIA's Final Published Estimates <sup>a</sup>  
January 1977 - December 1979**

	Motor Gasoline		Distillate Fuel Oil		Residual Fuel Oil	
	Mean Percent	Standard Deviation	Mean Percent	Standard Deviation	Mean Percent	Standard Deviation
EIA's Estimates from the <i>Monthly Petroleum Statistics Report</i> <sup>b</sup>	99.7%	0.8%	99.7%	1.1%	100.1%	0.7%
EIA's Estimates from the <i>Petroleum Statement, Monthly</i> <sup>c</sup>	99.9%	0.2%	100.0%	0.1%	100.1%	0.5%

# Represents a difference from 100% found to be statistically significant at the 95% level of confidence (n = 36).

<sup>a</sup>Final monthly estimates are from the "Petroleum Statement, Annual" for 1977, 1978 and 1979. The mean percent is calculated as follows: each preliminary estimate is first expressed as a percent of EIA's final published estimate, these are then summed and the sum is divided by the number of estimates. The standard deviation is the square root of the quantity computed by summing the squared deviation of the percents from the mean percent and then dividing by the number of percents.

<sup>b</sup>Based on 36 initial estimates appearing in issues dated January 1977 - December 1979.

<sup>c</sup>Based on 36 initial estimates appearing in issues dated January 1977 - December 1979.

SOURCE: *An Assessment of the Accuracy of Principal Data Series of the Energy Information Administration*, DOE/EIA-0292.



## Note 4 Changes in Petroleum Industry Reporting

Petroleum statistics contained in this report for all years through 1980 were developed using definitions, concepts, reporting procedures and aggregation methods that are consistent with those developed by the U.S. Bureau of Mines. Research conducted by the Energy Information Administration in 1979 and 1980 indicated that changes had occurred in the petroleum industry that were not being adequately reflected in EIA's reporting systems.

EIA reporting forms, definitions, and procedures were modified beginning in January 1981 to describe industry operations more accurately. Unfortunately, empirical information is not available to precisely measure the data shortcomings throughout 1980. However, estimates of the magnitudes of differences in the major data series are described below to form a basis for comparing 1979, 1980, and 1981 data.

### Motor Gasoline

Prior to 1979, the EIA product-supplied series for motor gasoline was consistently about 2 percent lower than the Federal Highway Administration (FHWA) gasoline-sales data series, which is derived from State tax receipts. This difference increased to about 4 percent in 1979 and 5 percent in 1980. There are two primary causes for this growing difference. First, refinery operations, particularly the flows of unfinished oils and the redesignation of some finished products, were not being accurately described on the EIA survey forms. Second, a large amount of gasoline was being produced away from refineries at "downstream blending stations" to take advantage of provisions in regulations governing the amount of lead that could be added. These blending stations were not reporting gasoline production to the EIA until the data system was changed in January 1981.

Quantitative estimates of the magnitude of the difference—in EIA's gasoline product supplied data in 1979 and 1980 have been made by the EIA and the American Petroleum Institute (API). The following table provides 1979 and 1980 data as published in the *Petroleum Statement Annual*, as well as EIA and API estimates of "recast" motor gasoline product supplied. EIA recast estimates were based upon preliminary monthly information in the *Monthly Petroleum Statement*. The ranges displayed in the EIA column reflect uncertainty in the estimates. Also shown are the FHWA motor gasoline sales statistics for those years. EIA has recently published a study of the quality of these FHWA data.<sup>1</sup>

<sup>1</sup>Office of Energy Information Validation, Energy Information Administration, U.S. Department of Energy, *Error Profile of the Motor Fuel Taxation Data used to Establish and Monitor State Emergency Conservation Targets* (Washington, D.C.: December, 1981).

**Finished Motor Gasoline Product Supplied on Old and New Basis  
(Thousand Barrels per Day)**

	1979				1980			
	EIA Reported	API Recast	EIA Recast	FHWA <sup>1</sup>	EIA Reported	API Recast	EIA Recast	FHWA <sup>1</sup>
Jan	6,830	7,230	7,084- 7,246	6,984	6,323	6,789	6,630- 6,791	6,672
Feb	7,254	7,496	7,389- 7,568	7,538	6,596	6,983	6,831- 7,008	6,830
Mar	7,229	7,414	7,301- 7,463	7,316	6,406	6,753	6,607- 6,768	6,713
Apr	7,055	7,300	7,187- 7,353	7,375	6,800	7,014	6,886- 7,052	6,981
May	7,213	7,429	7,313- 7,475	7,428	6,729	6,954	6,823- 6,984	7,044
Jun	7,191	7,483	7,350- 7,516	7,441	6,657	6,966	6,824- 6,991	7,049
Jul	6,902	7,241	7,105- 7,266	7,299	6,743	6,973	6,960	7,132
Aug	7,330	7,546	7,426- 7,588	7,619	6,648	6,841	6,828	7,090
Sep	6,881	7,122	7,016- 7,262	7,232	6,510	6,692	6,962	6,685
Nov	6,791	7,068	6,956- 7,122	7,142	6,234	6,507	6,516	6,951
Dec	6,730	7,106	6,966- 7,127	7,064	6,632	6,948	6,936	6,993
Average	7,034	7,302	7,183- 7,347	7,309	6,579	6,882	6,806- 6,889	6,925

<sup>1</sup>FHWA gasoline statistics published in their 1979 Table MF-33G, 08-06-80, contain aviation gasoline as well as motor gasoline. Only motor gasoline data are included in published 1980 data. Consequently, the 1979 data shown above were reduced by subtracting aviation gasoline product supplied quantities as published by EIA in the 1979 *Petroleum Statement Annual*. The 1980 FHWA data published in their 1980 Table MF-38GA, August 1981, did not require this adjustment.

### Distillate and Residual Fuel Oil

Distillate and residual fuel oil refinery production statistics through 1980 were adjusted to account for an imbalance between unfinished oil supply and disposition. The reported quantities of refinery inputs of unfinished oils typically exceed the available supply of unfinished oils. It has been assumed that this occurs when distillate and residual fuel oil produced by a refinery is shipped to another refinery, where it is treated as unfinished oil. This oil is then reprocessed rather than used or sold as distillate or residual fuel oil.

For many years (including 1980), the difference between unfinished oil disposition and supply was subtracted from distillate and residual fuel oil production to adjust for this discrepancy. Two-thirds of the difference was applied to distillate, and one-third to residual fuel oil.

Beginning in January 1981 this adjustment was discontinued because there was not sufficient empirical evidence to support it. The following table presents distillate and residual fuel oil refinery production in 1980 as published (adjusted) and on the same basis as 1981 statistics are now being completed (unadjusted) to permit comparison between 1980 and 1981 data series. Adjusted distillate and residual fuel oil product supplied volumes differ from the unadjusted volumes by the same amounts as the adjusted and unadjusted production volumes.

Adjusted and Unadjusted Refinery Production, and Unadjusted Product Supplied of Distillate and Residual Fuel Oils, by Month for 1979 and 1980 (Thousand Barrels Per Day)

1979

Month	Distillate Fuel Oil				Residual Fuel Oil			
	Adj. Ref. Prod.	Unadj. Ref. Prod.	Diff.	Unadj. Product Supplied	Adj. Ref. Prod.	Unadj. Ref. Prod.	Diff.	Unadj. Product Supplied
Jan.	3,043	3,108	65	4,646	1,912	1,946	34	3,594
Feb.	2,888	2,945	57	4,869	1,792	1,822	30	3,625
Mar.	3,019	3,026	7	3,671	1,719	1,723	4	3,243
Apr.	2,945	2,978	32	3,048	1,639	1,656	17	2,524
May	3,066	3,093	27	3,025	1,586	1,600	14	2,517
Jun.	3,153	3,187	35	2,743	1,548	1,566	18	2,601
Jul.	3,305	3,344	38	2,601	1,575	1,594	20	2,471
Aug.	3,321	3,359	38	2,799	1,584	1,603	20	2,570
Sep.	3,354	3,306	-48	2,599	1,627	1,602	-25	2,584
Oct.	3,251	3,217	-34	3,085	1,629	1,612	-17	2,523
Nov.	3,239	3,200	-39	3,208	1,736	1,716	-20	2,795
Dec.	3,221	3,238	17	3,725	1,894	1,903	9	3,022
Average	3,152	3,169	16	3,327	1,687	1,695	8	2,834

1980

Month	Distillate Fuel Oil				Residual Fuel Oil			
	Adj. Ref. Prod.	Unadj. Ref. Prod.	Diff.	Unadj. Product Supplied	Adj. Ref. Prod.	Unadj. Ref. Prod.	Diff.	Unadj. Product Supplied
Jan.	3,013	3,093	80	3,794	1,771	1,812	41	3,108
Feb.	2,766	2,888	122	3,834	1,773	1,836	63	3,168
Mar.	2,557	2,690	133	3,312	1,584	1,652	68	2,726
Apr.	2,460	2,554	94	2,729	1,595	1,643	48	2,492
May	2,474	2,610	136	2,538	1,509	1,579	70	2,305
Jun.	2,646	2,721	75	2,392	1,575	1,613	38	2,359
Jul.	2,689	2,783	94	2,343	1,480	1,528	48	2,339
Aug.	2,461	2,582	121	2,258	1,444	1,506	62	2,348
Sep.	2,686	2,726	40	2,627	1,495	1,516	21	2,380
Oct.	2,589	2,650	61	2,981	1,512	1,543	31	2,258
Nov.	2,703	2,823	120	3,069	1,579	1,641	62	2,513
Dec.	2,891	3,052	161	3,776	1,660	1,743	83	2,762
Average	2,661	2,764	103	2,969	1,580	1,634	54	2,562

Total Petroleum Products

The imbalance between the supply and disposition of unfinished oils is now reported as part of the reclassified products (line 39) in the U.S. Petroleum Balance (Table 1). Imbalances between the supply and disposition of gasoline blending components comprise the remainder of the reclassified in Table 1. These imbalances are reported as negative product supplied in the Other Liquids section of the table of Supply and Disposition Statistics (Table 2). Since these changes only involve redistribution of the volumes of gasoline, distillate and residual fuel oil, gasoline blending components, and unfinished oils, the total volume of petroleum products supplied remains unaffected by them.

## **Note 5 Notes on Tables**

**5.1 Crude Oil and Petroleum Products Overview** statistics on the referenced line appear in Table 4 of the Detailed Statistics, except where noted.

- Crude Oil and Petroleum Products Stock Withdrawal (+) or Addition (-), Petroleum Products Supplied, Total Imports, Crude Oil Imports, Total Exports, and Crude Oil Exports appear as labeled in Table 4. Total Production and Crude Oil Production appear under Field Production in Table 4.

- Natural Gas Plant Production is the sum of Natural Gas Plant Liquids and Finished Petroleum Products Field Production in Table 4.

- Petroleum Products Imports is the sum of Natural Gas Plant Liquids and LRGs, Other Liquids, and Finished Petroleum Products Imports in Table 4.

- Petroleum Products Exports is the sum of Natural Gas Plant Liquids and LRGs, Other Liquids, and Finished Petroleum Products Exports in Table 4.

- Total Crude Oil and Petroleum Products Ending Stocks appear in thousands of barrels in Table 2.

**5.2 Crude Oil Supply and Disposition** statistics on the referenced line appear in Table 1 of the Detailed Statistics, except where noted.

- Total Domestic Field Production, Alaskan Field Production, SPR Imports, Other Imports (synonymous with Imports Gross Excl. SPR), SPR and Other Primary Stocks Withdrawal (+) or Addition (-), Unaccounted For Crude Oil, Refinery Inputs, and Exports appear as labeled in Table 1.

- SPR Ending Stocks and Other Primary Ending Stocks (synonymous with stocks excluding SPR) appear in thousands of barrels in Table 1.

- Total Crude Oil Ending Stocks appear in thousands of barrels in Table 2.

- Total Imports appear in Table 4.

**5.3 Finished Motor Gasoline Supply and Disposition** statistics on the referenced line appear in Table 4 of the Detailed Statistics, except where noted.

- Total Production is the sum of Field Production and Refinery Production in Table 4.

- Imports, Stock Withdrawal (+) or Addition (-), Exports, and Product Supplied appear as labeled in Table 4.

- Unleaded Percent of Total Product Supplied represents the ratio of finished unleaded motor gasoline product supplied to total finished motor gasoline product supplied, multiplied by 100 and rounded to the nearest tenth.

- Ending Stocks appear in thousands of barrels in Table 2.

**5.4 Distillate and Residual Fuel Oil Supply and Disposition** statistics on the referenced lines appear in Table 4 of the Detailed Statistics, except where noted.

- Total Production is the sum of Field Production and Refinery Production in Table 4.

- Imports, Stock Withdrawal (+) or Addition (-), Crude Used Directly, Exports, and Product Supplied appear as labeled in Table 4.

- Ending Stocks appear in thousands of barrels in Table 2.

**5.5 Liquefied Petroleum Gases and Ethane** statistics represent the aggregation of statistics on ethane, propane, butane, butane-propane mixtures, ethane-propane mixtures, and isobutane. The statistics on the referenced line appear in Table 4 of the Detailed Statistics, except where noted.

- Total Production is the sum of Field Production and Refinery Production in Table 4.
- Imports, Stock Withdrawal (+) or Addition (-), Refinery Inputs, Exports, and Product Supplied appear as labeled in Table 4.
- Ending stocks appear in thousands of barrels in Table 2.

**5.6 Other Petroleum Products Supply and Disposition** statistics represent the aggregation of statistics on natural gasoline, isopentane, unfractionated stream, plant condensate, other liquids, and all finished petroleum products except finished motor gasoline, distillate fuel oil, and residual fuel oil. The statistics on the referenced line are aggregated from Table 4 of the Detailed Statistics, except where noted.

- Total Production is the aggregated sum of Field Production and Refinery Production in Table 4.
- Imports, Stock Withdrawal (+) or Addition (-), Refinery Inputs, Exports, and Product Supplied are aggregated from Table 4.
- Ending stocks are aggregated from ending stocks in thousands of barrels in Table 2.

#### **Note 5.7 Table 1. U.S. Petroleum Balance**

- Lines (1) through (3) of Table 1: Crude oil (including lease condensate) production for "Alaska," "Lower 48 States," and "Total U.S." are calculated by calling the conservation agency in Alaska for Alaskan crude oil production during the month, estimating crude oil production in the United States (see Explanatory Note 2.2), and taking the difference to equal production in the lower 48 states.
- Line (5) of Table 1: SPR imports are reported on Survey Form ERA-60.
- Line (12) of Table 1: "Total Other Sources" equals crude oil stock withdrawal (+) or addition (-) plus unaccounted for crude oil plus crude used as fuel and losses in Table 2.
- Line (14) of Table 1: Natural gas plant liquids (NGPL) "Production" equals field production of natural gas plant liquids (NGPL) plus field production of finished petroleum products in Table 2.
- Line (15) of Table 1: NGPL "Imports" equals the sum of the imports of natural gasoline and isopentane, unfractionated stream, and plant condensate imports in Table 2.
- Line (16) of Table 1: NGPL "Stock Withdrawal (+) or Addition (-)" is equal to the sum of stock withdrawal (+) or addition (-) of natural gasoline and isopentane, unfractionated stream, and plant condensate in Table 2.
- Line (17) of Table 1 equals the sum of lines (14), (15), and (16) of Table 1.
- Line (18) of Table 1: unfinished oils and gasoline blending components "Stock Withdrawal (+) or Addition (-)" equals stock withdrawal (+) or addition (-) for other hydrocarbons and alcohol, for unfinished oils, motor gasoline blending components, and aviation gasoline blending components.
- Line (20) of Table 1: "Other Hydrocarbons and Alcohol New Supply" equals the field production of same in Table 2.
- Line (21) on Table 1: "Refinery Processing Gain" is a balancing item equal to total refinery production minus total refinery input in Table 2.
- Line (22) on Table 1: "Crude Used Directly" equals the sum of crude oil used directly as distillate and residual fuel oils in Table 2.
- Line (23) of Table 1: "Total Other Liquids" equals the sum of lines (18) through (22) of Table 1.
- Line (24) of Table 1: "Total Production of Products" equals crude oil input to refineries plus field production of NGPL and finished petroleum products; plus imports of natural gasoline and isopentane, unfractionated stream, and plant condensate; plus stock withdrawal (+) or addition (-) of natural gasoline and isopentane, unfractionated stream, and plant condensate; plus stock withdrawal (+) or

addition (-) of other hydrocarbons and alcohol, unfinished oils, aviation gasoline blending components, and motor gasoline blending components; plus imports of unfinished oils, aviation gasoline blending components, and motor gasoline blending components; plus field production of other hydrocarbons and alcohol; plus total refinery production; minus total refinery input; plus crude oil used as distillate and residual fuel oils in Table 2.

- Line (25) of Table 1: "Gross Imports of Refined Products" equals imports of LPG and ethane plus imports of finished petroleum products in Table 2.
- Line (26) of Table 1: "Exports of Refined Products" equals exports of LPG and ethane plus exports of finished petroleum products in Table 2.
- Line (27) of Table 1: "Net Imports of Refined Products" equals the difference between lines (25) and (26) of Table (1).
- Line (28) of Table 1: "Total New Supply of Products" equals crude oil input to refineries plus field production of NGPL and finished petroleum products; plus imports of natural gasoline and isopentane, unfractionated stream, and plant condensate; plus stock withdrawal (+) or addition (-) of natural gasoline and isopentane, unfractionated stream, and plant condensate; plus stock withdrawal (+) or addition (-) of other hydrocarbons and alcohol, unfinished oils, aviation gasoline blending components, and motor gasoline blending components; plus imports of unfinished oils, aviation gasoline blending components, and motor gasoline blending components; plus field production of other hydrocarbons and alcohol; plus total refinery production; minus total refinery input; plus crude oil used as distillate and residual fuel oils; plus imports of LPG and ethane and finished petroleum products; minus exports of LPG and ethane and finished petroleum products in Table 2.
- Line (29) of Table 1: "Refined Products Stocks Withdrawal (+) or Addition (-)" equals the sum of stock withdrawal (+) or addition (-) for LPG and ethane, and finished petroleum products in Table 2.
- Line (30) of Table 1: "Total Petroleum Products Supplied for Domestic Use" equals total products supplied in Table 2.
- Lines (31) through (37) of Table 1 equal the respective products supplied in Table 2.
- Line (38) of Table 1: "Other Products Supplied" equals the sum of natural gasoline and isopentane, unfractionated stream, plant condensate, aviation gasoline, naphtha < 400 Deg. F for petrochemical feedstock uses, other oils > 400 Deg. F. for petrochemical feedstock use, special naphthas, lubricants, waxes, coke, asphalt, road oil, still gas, and miscellaneous products supplied in Table 2.
- Line (39) of Table 1: "Total Reclassified" is a balancing item equal to the sum of unfinished oils, motor gasoline blending components, and aviation gasoline blending components products supplied in Table 2.
- Line (40) of Table 1: "Total Product Supplied" is equal to total products supplied in Table 2.
- The sum of lines (41) and (42) of Table 1, stocks of "Crude Oil and Lease Condensate (Excluding SPR)" and stocks held by the "Strategic Petroleum Reserve," equals ending stocks of crude oil in Table 2. SPR stocks are reported on Form EIA-90.
- Line (46) of Table 1, stocks of "Refined Products," equals the sum of LPG and ethane and finished petroleum product stocks in Table 2.